US Army Corps
of Engineers
Savannah District

Fort Bragg
North Carolina

Solicitation Number
DACA21-03-R-0036
Separate Battalions Barracks Complex
Phases 3 and 4
FY-03/FY-04, Line Item 25134 and 53538
Volume IV of IV – Asbestos and Hazardous Waste Material Reports
June 2003

THIS SOLICITATION IS UNRESTRICTED PURSUANT TO THE "BUSINESS OPPORTUNITY DEVELOPMENT REFORM ACT OF 1988" (PUBLIC LAW 100-656)

U.S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
100 WEST OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

INSTALLATION PROVIDED DATA

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES

May 24, 1994 *(Revised)*

Mr. William C. Parish, P.E.
Hemphill Associates
4425 Randolph Road, Suite 302
Charlotte, North Carolina 28211

Subject: **Report of Building Survey to Identify Asbestos-Containing Materials**
Fort Bragg Asbestos Abatement & Demolition Project
C.O.E. Contract No. DACA 21-93-D-0027
Delivery Order No. 0001
C.O.E. Project No. FF-00041-3
Law Engineering Job No. 225-93410-01

Dear Mr. Parish:

Law Engineering is pleased to present this report for the facility survey at the Fort Bragg Alpha Quad barracks area at Fort Bragg, North Carolina. The purpose of our services was to conduct a facility survey to identify, collect and analyze suspect materials to identify the presence and general location of asbestos-containing materials. Additionally our scope of work included providing an estimate of the quantities of asbestos-containing materials and an opinion of cost of removal. This work was authorized by your acceptance of our proposal number 076A3 dated October 15, 1993.

PROJECT INFORMATION

The subject sites are single and two story wood framed and sided buildings originally built in the 1940's to be used as troop barracks. The buildings have since been renovated. Their present use varies and includes support offices, enlisted dining halls, band hall and arms lockers. Typically, the two story buildings have mechanical rooms which house the heating units while the single story buildings have their heating units located inside the buildings. The roofs are constructed of plywood with asphalt composition shingles. The interior walls are wood studs with gypsum board covering them, the floors are plywood with wire-lathe covered with cement and resilient floor tiles. Piping was observed to be insulated with fiberglass.

ASBESTOS BULK SAMPLING RECORD
FORT BRAGG
ASBESTOS ABATEMENT AND DEMOLITION
Law Job No. 225-93410-01

Date Sample Collected: 10/25/93 and 10/26/93 Date Received in Lab: 10/28/93 and 11/10/93

Sampler's Name: Michael Galati Microscopist's Name: Harold M. Messenger, III

Analysis Method: PLM and Dispersion Staining

Field Sample No.	Sample Location	Type of Material	Percentage and Type of Asbestos Present
A-4658-002	Bathroom	12 by 12 Inch White Floor Tile with Mastic	No Asbestos Detected
A-4658-003	Bathroom	Ceiling Tile	No Asbestos Detected
A-4659-001	Dining Area	9 by 9 Inch Brown Floor Tile with Mastic	Two Layers: (1) 2% Chrysotile (2) 10% Chrysotile
A-4659-002	Dining Area	9 by 9 Inch Black Floor Tile with Mastic	Two Layers: (1) 2% Chrysotile (2) 15% Chrysotile
A-4659-003	Bathroom	12 by 12 Inch White Floor Tile with Mastic	No Asbestos Detected
A-4659-004	Bathroom	Ceiling Tile	No Asbestos Detected
A-4661-001	Dining Area	9 by 9 Inch Black Floor Tile with Mastic	Two Layers: (1) 2% Chrysotile (2) 15% Chrysotile
A-4661-002	Bathroom	12 by 12 Inch White Floor Tile with Mastic	No Asbestos Detected
A-4661-003	Bathroom	Ceiling Tile	No Asbestos Detected
A-4662-001	1st Floor	12 by 12 Inch Blue Tile	Two Layers: (1) No Asbestos Detected (2) 10% Chrysotile
A-4662-002	Bathroom	Ceiling Tile	No Asbestos Detected
A-4662-003	Band Room/Offices	Ceiling Tile	No Asbestos Detected
A-4846-001	Mechanical Room	Wall Panel	15% Chrysotile
A-4847-001	Back Office	Floor Covering	No Asbestos Detected

BULK SAMPLE ANALYSIS

PROJECT NAME: Ft. Bragg FF-00041-3

DATE OF ANALYSIS: 11/01/93 JOB NO.: 225-93410-01

CLIENT ID NO.: A-4661-001 LAB NO.: 31094

SAMPLE LOCATION: Dining Area/9 by 9 Inch Black Floor Tile with Mastic

GROSS SAMPLE DESCRIPTION: 2 Layers: (1) Black, Thin Sheet (2) Black, Sticky Mass

MINERAL/MATERIAL	MATERIALS PRESENT* 1	2	ESTIMATED PERCENT IN SAMPLE** 1	2
ASBESTIFORM				
Chrysotile/Antigorite	x	x	2	15
Amosite				
Crocidolite				
Tremolite/Actinolite				
Anthophyllite				
NONASBESTIFORM				
Lizardite				
Antigorite				
Tremolite/Actinolite				
Mineral Wool				
Cellulose/Paper/Wood Fiber	x	x	10	10
Synthetic Fibers				
Diatoms				
Perlite				
Mica				
Magnetite				
Quartz/Calcite/Gypsum	x	x	40	60
Others				
Binders	x	x	48	15

COMMENTS: Sample results relate only to the items tested

NOTES:

*Polarized Light Microscopy coupled with dispersion staining is the technique used for identification.

**The percentage of each component is visually estimated.

MICROSCOPIST:

SHAWN BETHAY NVLAP #1226

BULK SAMPLE ANALYSIS

PROJECT NAME: Ft. Bragg FF-00041-3

DATE OF ANALYSIS: 11/01/93 JOB NO.: 225-93410-01

CLIENT ID NO.: A-4661-002 LAB NO.: 31095

SAMPLE LOCATION: Bathroom/12 by 12 Inch White Floor Tile with Mastic

GROSS SAMPLE DESCRIPTION: 2 Layers: (1) White, Thin Sheet (2) Yellow, Sticky Mass

MINERAL/MATERIAL	MATERIALS PRESENT* 1	2	ESTIMATED PERCENT IN SAMPLE** 1	2
ASBESTIFORM				
Chrysotile/Antigorite				
Amosite				
Crocidolite				
Tremolite/Actinolite				
Anthophyllite				
NONASBESTIFORM				
Lizardite				
Antigorite				
Tremolite/Actinolite				
Mineral Wool				
Cellulose/Paper/Wood Fiber	x	x	30	15
Synthetic Fibers				
Diatoms				
Perlite				
Mica				
Magnetite				
Quartz/Calcite/Gypsum	x	x	30	60
Others				
Binders	x	x	40	25

COMMENTS: Sample results relate only to the items tested

NOTES:

*Polarized Light Microscopy coupled with dispersion staining is the technique used for identification.

**The percentage of each component is visually estimated.

MICROSCOPIST:

HAROLD M. MESSENGER, III NVLAP #1226

BULK SAMPLE ANALYSIS

PROJECT NAME: Ft. Bragg FF-00041-3

DATE OF ANALYSIS: 11/01/93 JOB NO.: 225-93410-01

CLIENT ID NO.: A-4661-003 LAB NO.: 31096

SAMPLE LOCATION: Bathroom/Ceiling Tile

GROSS SAMPLE DESCRIPTION: Soft and Thick, Fibrous Mass

MINERAL/MATERIAL	MATERIALS PRESENT*	ESTIMATED PERCENT IN SAMPLE**
ASBESTIFORM		
Chrysotile/Antigorite		
Amosite		
Crocidolite		
Tremolite/Actinolite		
Anthophyllite		
NONASBESTIFORM		
Lizardite		
Antigorite		
Tremolite/Actinolite		
Mineral Wool	x	25
Cellulose/Paper/Wood Fiber	x	30
Synthetic Fibers		
Diatoms		
Perlite	x	25
Mica		
Magnetite		
Quartz/Calcite/Gypsum	x	5
Others		
Binders	x	15

COMMENTS: Sample results relate only to the items tested

NOTES:

*Polarized Light Microscopy coupled with dispersion staining is the technique used for identification.

**The percentage of each component is visually estimated.

MICROSCOPIST:

SHAWN BETHAY NVLAP #1226

BULK SAMPLE ANALYSIS

PROJECT NAME: Fort Bragg FF-00041-3

DATE OF ANALYSIS: 2/11/94 JOB NO.: 225-93410-01

CLIENT ID NO.: A-4661-004 LAB NO.: 32829

SAMPLE LOCATION: Roof/Roof Material

GROSS SAMPLE DESCRIPTION: Black, Pliable

MINERAL/MATERIAL	MATERIALS PRESENT*	ESTIMATED PERCENT IN SAMPLE**
ASBESTIFORM		
Chrysotile/Antigorite		
Amosite		
Crocidolite		
Tremolite/Actinolite		
Anthophyllite		
NONASBESTIFORM		
Lizardite		
Antigorite		
Tremolite/Actinolite		
Mineral Wool		
Cellulose/Paper/Wood Fiber		
Synthetic Fibers		
Diatoms		
Perlite		
Mica	x	5
Magnetite		
Quartz/Calcite/Gypsum	x	15
Others		
Glass Fibers	x	15
Bitumen	x	65
Binders		

COMMENTS: Sample results relate only to the items tested

NOTES:

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**The percentage of each component is visually estimated.

MICROSCOPIST:

JACK E. COAN NVLAP #1226

ASBESTOS BULK SAMPLING RECORD
FORT BRAGG
ASBESTOS ABATEMENT AND DEMOLITION
Law Job No. 225-93410-01

Date Sample Collected: 10/25/93 and 10/26/93 Date Received in Lab: 10/28/93 and 11/10/93

Sampler's Name: Michael Galati Microscopist's Name: Harold M. Messenger, III

Analysis Method: PLM and Dispersion Staining

Field Sample No.	Sample Location	Type of Material	Percentage and Type of Asbestos Present
A-4658-002	Bathroom	12 by 12 Inch White Floor Tile with Mastic	No Asbestos Detected
A-4658-003	Bathroom	Ceiling Tile	No Asbestos Detected
A-4659-001	Dining Area	9 by 9 Inch Brown Floor Tile with Mastic	Two Layers: (1) 2% Chrysotile (2) 10% Chrysotile
A-4659-002	Dining Area	9 by 9 Inch Black Floor Tile with Mastic	Two Layers: (1) 2% Chrysotile (2) 15% Chrysotile
A-4659-003	Bathroom	12 by 12 Inch White Floor Tile with Mastic	No Asbestos Detected
A-4659-004	Bathroom	Ceiling Tile	No Asbestos Detected
A-4661-001	Dining Area	9 by 9 Inch Black Floor Tile with Mastic	Two Layers: (1) 2% Chrysotile (2) 15% Chrysotile
A-4661-002	Bathroom	12 by 12 Inch White Floor Tile with Mastic	No Asbestos Detected
A-4661-003	Bathroom	Ceiling Tile	No Asbestos Detected
A-4662-001	1st Floor	12 by 12 Inch Blue Tile	Two Layers: (1) No Asbestos Detected (2) 10% Chrysotile
A-4662-002	Bathroom	Ceiling Tile	No Asbestos Detected
A-4662-003	Band Room/Offices	Ceiling Tile	No Asbestos Detected
A-4846-001	Mechanical Room	Wall Panel	15% Chrysotile
A-4847-001	Back Office	Floor Covering	No Asbestos Detected

BULK SAMPLE ANALYSIS

PROJECT NAME: Ft. Bragg FF-00041-3

DATE OF ANALYSIS: 11/17/93 JOB NO.: 225-93410-01

CLIENT ID NO.: A-4662-001 LAB NO.: 31407

SAMPLE LOCATION: 1st Floor/12 by 12 Inch Floor Tile

GROSS SAMPLE DESCRIPTION: 2 Layers: (1) Light Blue, Pliable Sheet (2) Black, Pitchy Film

MINERAL/MATERIAL	MATERIALS PRESENT* 1	2	ESTIMATED PERCENT IN SAMPLE** 1	2
ASBESTIFORM				
Chrysotile/Antigorite		x		10
Amosite				
Crocidolite				
Tremolite/Actinolite				
Anthophyllite				
NONASBESTIFORM				
Lizardite				
Antigorite				
Tremolite/Actinolite				
Mineral Wool				
Cellulose/Paper/Wood Fiber	x	x	TR	5
Synthetic Fibers				
Diatoms				
Perlite				
Mica				
Magnetite				
Quartz/Calcite/Gypsum	x	x	70	35
Others				
Binders	x	x	30	50

COMMENTS: Sample results relate only to the items tested

NOTES:

*Polarized Light Microscopy coupled with dispersion staining is the technique used for identification.

**The percentage of each component is visually estimated.

MICROSCOPIST:

HAROLD M. MESSENGER, III NVLAP #1226

BULK SAMPLE ANALYSIS

PROJECT NAME: Ft. Bragg FF-00041-3

DATE OF ANALYSIS: 11/17/93 JOB NO.: 225-93410-01

CLIENT ID NO.: A-4662-002 LAB NO.: 31408

SAMPLE LOCATION: Bathroom/Ceiling Tile

GROSS SAMPLE DESCRIPTION: Beige, Fibrous

MINERAL/MATERIAL	MATERIALS PRESENT*	ESTIMATED PERCENT IN SAMPLE**
ASBESTIFORM		
Chrysotile/Antigorite		
Amosite		
Crocidolite		
Tremolite/Actinolite		
Anthophyllite		
NONASBESTIFORM		
Lizardite		
Antigorite		
Tremolite/Actinolite		
Mineral Wool	x	25
Cellulose/Paper/Wood Fiber	x	25
Synthetic Fibers		
Diatoms		
Perlite	x	25
Mica		
Magnetite		
Quartz/Calcite/Gypsum	x	5
Others		
White Paint	x	15
Binders	x	5

COMMENTS: Sample results relate only to the items tested

NOTES:

*Polarized Light Microscopy coupled with dispersion staining is the technique used for identification.

**The percentage of each component is visually estimated.

MICROSCOPIST:

HAROLD M. MESSENGER, III NVLAP #1226

BULK SAMPLE ANALYSIS

PROJECT NAME: Ft. Bragg FF-00041-3

DATE OF ANALYSIS: 11/17/93 JOB NO.: 225-93410-01

CLIENT ID NO.: A-4662-003 LAB NO.: 31409

SAMPLE LOCATION: Band Room, Offices/Ceiling Tile

GROSS SAMPLE DESCRIPTION: Beige, Fibrous

MINERAL/MATERIAL	MATERIALS PRESENT*	ESTIMATED PERCENT IN SAMPLE**
ASBESTIFORM		
Chrysotile/Antigorite		
Amosite		
Crocidolite		
Tremolite/Actinolite		
Anthophyllite		
NONASBESTIFORM		
Lizardite		
Antigorite		
Tremolite/Actinolite		
Mineral Wool	x	91
Cellulose/Paper/Wood Fiber		
Synthetic Fibers		
Diatoms		
Perlite		
Mica		
Magnetite		
Quartz/Calcite/Gypsum	x	2
Others		
White Plastic	x	5
Binders	x	2

COMMENTS: Sample results relate only to the items tested

NOTES:

*Polarized Light Microscopy coupled with dispersion staining is the technique used for identification.

**The percentage of each component is visually estimated.

MICROSCOPIST:

HAROLD M. MESSENGER, III NVLAP #1226

BULK SAMPLE ANALYSIS

PROJECT NAME: Fort Bragg FF-00041-3

DATE OF ANALYSIS: 2/11/94 JOB NO.: 225-93410-01

CLIENT ID NO.: A-4662-004 LAB NO.: 32830

SAMPLE LOCATION: Roof/Roof Material

GROSS SAMPLE DESCRIPTION: Black, Pliable

MINERAL/MATERIAL	MATERIALS PRESENT*	ESTIMATED PERCENT IN SAMPLE**
ASBESTIFORM		
Chrysotile/Antigorite		
Amosite		
Crocidolite		
Tremolite/Actinolite		
Anthophyllite		
NONASBESTIFORM		
Lizardite		
Antigorite		
Tremolite/Actinolite		
Mineral Wool		
Cellulose/Paper/Wood Fiber		
Synthetic Fibers		
Diatoms		
Perlite		
Mica	x	5
Magnetite		
Quartz/Calcite/Gypsum	x	15
Others		
Glass Fibers	x	15
Bitumen	x	65
Binders		

COMMENTS: Sample results relate only to the items tested

NOTES:

*Polarized Light Microscopy coupled with dispersion staining is the technique used for identification.

**The percentage of each component is visually estimated.

MICROSCOPIST:

JACK E. COAN NVLAP #1226

HUB TESTING LABORATORIES

Consulting and Testing Engineers

95 Beaver Street — Waltham, Mass. 02154 — (617) 893-8330

FIELD REPORT FOR BULK SAMPLING

REPORT FOR: DIRECTORATE OF CONTRACTING
FORT BRAGG, NC

PROJECT: T2-5807

BUILDING DESCRIPTION: One Story Sheet Metal Ceiling and Roof

SAMPLING LOCATION:	CONDITION	SAMPLE NO.
Open storage space studded wall/ceiling		
No heat or water		
No suspect material		

HUB TESTING LABORATORIES

Consulting and Testing Engineers

95 Beaver Street — Waltham, Mass. 02154 — (617) 893-8330

FIELD REPORT FOR BULK SAMPLING

REPORT FOR: Directorate of Contracting
Fort Bragg, NC

PROJECT: T2-5517

BUILDING DESCRIPTION: One Story Vinyl Siding

SAMPLING LOCATION	CONDITION	SAMPLE NO.
Boiler Room - On Boiler 250 Sq. Feet	Poor	1
Garage Area - NSM		
Hallway - NSM		
Men's & Ladies' Bathroom - NSM		
NSM Above Dropped In Ceiling		

Asbestos Inspection Report
Fort Bragg, North Carolina

Building No. 2-6105

Summary

Building No. 2-6105 is used as a warehouse. The building is of block construction with a wood rafter, shingled roof and a concrete floor. Suspect material included the roofing material and window putty. No asbestos containing material was found.

Homogeneous Area: H01 Window Putty

Homogeneous area H01 is the window putty used on the windows of the building.

Sample No.	Location	% Asbestos/ Type
2-6105-0101	Window Frame	None Detected
2-6105-0102	Window Frame	None Detected
2-6105-0103	Window Frame	None Detected

Homogeneous Area: H02 Roofing Materials

Homogeneous area H02 is the roof shingles and felt material used on the roof of the building.

Sample No.	Location	% Asbestos/ Type
2-6105-0204	Roof	None Detected
2-6105-0205	Roof	None Detected
2-6105-0206	Roof	None Detected

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EMSL

Alpha Environmental Sciences
400 Dellwood Rd. Bldg.6A Ste 2
P.O.Box 31
Waynesville, NC 28786

Thursday, January 16, 1997

Ref Number: NC97148

POLARIZED LIGHT MICROSCOPY (PLM)

Project: Project No. 6439.01 Al - Bldg.2-6105

				ASBESTOS		NONASBESTOS		
SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	%	TYPE	%	FIBROUS	% NONFIBROUS
0101		Grey Non-Fibrous Homogeneous	Teased	None Detected				100% Other
0102		Grey Non-Fibrous Homogeneous	Teased	None Detected				100% Other
0103		Grey Non-Fibrous Homogeneous	Teased	None Detected				100% Other
0204		Grey/Black Fibrous Heterogeneous	Dissolved/Teased	None Detected		60%	Cellulose	40% Other
0205		Grey/Black Fibrous Heterogeneous	Dissolved/Teased	None Detected		60%	Cellulose	40% Other
0206		Grey/Black Fibrous Heterogeneous	Dissolved/Teased	None Detected		60%	Cellulose	40% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Thomas Ferrante
Tom Ferrante
Analyst

R.K. Mahoney
Approved
Signatory

Asbestos Inspection Report
Fort Bragg, North Carolina

Building No. 2-5519

Summary

Building No. 2-5519 is of block construction with a shingled roof. The exterior is pressboard siding and a plywood soffit. Suspect materials included floor tile, mastic, ceiling tile, wallboard, spray-on ceiling material and roofing materials. No asbestos containing materials were found.

Homogeneous Area: H01 Roofing Shingles and Felt

Homogeneous area H01 is the roof shingles and felt paper used on the roof of the building.

Sample No.	Location	% Asbestos/ Type
2-5519-0101	Roof	None Detected
2-5519-0102	Roof	None Detected

Homogeneous Area: H02 Floor Tile and Mastic

Homogeneous area H02 is the 12" x 12", gray floor tile and mastic used in the small office only.

Sample No.	Location	% Asbestos/ Type
2-5519-0203	Office	None Detected
2-5519-0204	Office	None Detected
2-5519-0205	Office	None Detected

Homogeneous Area: H03 Spray-on Ceiling Material

Homogeneous area H03 is the white, sprayed-on ceiling surfacing material used in the rear half of the building.

Sample No.	Location	% Asbestos/ Type
2-5519-0306	Hall	None Detected
2-5519-0307	Hall	None Detected
2-5519-0308	Large room	None Detected

Homogeneous Area: H04 Ceiling Tiles

Homogeneous area H04 is the 2' x 2', white ceiling tiles used in the Hall and office areas only.

Sample No.	Location	% Asbestos/ Type
2-5519-0409	Office	None Detected
2-5519-0410	Office	None Detected
2-5519-0411	Office	None Detected

Homogeneous Area: H05 Ceiling Wallboard

Homogeneous area H05 is the sheetrock material used on the ceiling in the rear half of the building.

Sample No.	Location	% Asbestos/ Type
2-5519-0512	Office	None Detected
2-5519-0513	Office	None Detected
2-5519-0514	Office	None Detected

Homogeneous Area: H06 Wallboard

Homogeneous area H06 is the sheetrock wallboard used on the walls in the Hall and office areas.

Sample No.	Location	% Asbestos/ Type
2-5519-0615	Office	None Detected
2-5519-0616	Office	None Detected
2-5519-0617	Office	None Detected

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EMSL

Alpha Environmental Sciences, Inc.
105 Wappoo Creek Drive
Charleston, SC 29412

Thursday, May 01, 1997

Ref Number: NC972348

POLARIZED LIGHT MICROSCOPY (PLM)

Project: 6439.01-AI

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS %	ASBESTOS TYPE	NONASBESTOS %	NONASBESTOS FIBROUS	NONASBESTOS %	NONASBESTOS NONFIBROUS
2-5519-0101		Black Fibrous Homogeneous	Dissolved/Teased		None Detected	20% 30%	Cellulose Glass	50%	Other
2-5519-0102		Black Fibrous Heterogeneous	Dissolved/Teased		None Detected	40% 25%	Cellulose Glass	35%	Other
2-5519-0203		White Non-Fibrous Homogeneous	Dissolved/Teased		None Detected			100%	Other
2-5519-0204		White Non-Fibrous Homogeneous	Dissolved/Teased		None Detected			100%	Other
2-5519-0205		White Non-Fibrous Homogeneous	Dissolved/Teased		None Detected			100%	Other
2-5519-0306		White Fibrous Homogeneous	Teased		None Detected	< 1%	Cellulose	100%	Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Thomas A Ferrante
Tom Ferrante
Analyst

R K Mahoney
Approved
Signatory

Westmont, NJ 609-858-4800 | Piscataway, NJ 908-981-0550 | Carle Place, NY 516-997-7251 | Manhattan, NY 212-290-0052 | Seattle, WA 206-233-9007 | Ann Arbor, MI 313-668-6810 | San Mateo, CA 415-570-5401 | Smyrna, GA 404-333-6066 | Greensboro, NC 910-297-1487 | Houston, TX 713-686-3635

EMSL

Alpha Environmental Sciences, Inc.
105 Wappoo Creek Drive
Charleston, SC 29412

Thursday, May 01, 1997

Ref Number: NC972348

POLARIZED LIGHT MICROSCOPY (PLM)

Project: 6439.01-AI

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS %	ASBESTOS TYPE	NONASBESTOS %	NONASBESTOS FIBROUS	NONASBESTOS %	NONASBESTOS NONFIBROUS
2-5519-0307		White Fibrous Homogeneous	Teased		None Detected	< 1%	Cellulose	100%	Other
2-5519-0308		White Fibrous Homogeneous	Teased		None Detected	< 1%	Cellulose	100%	Other
2-5519-0409		Grey/Silver Fibrous Heterogeneous	Teased		None Detected	60% 20%	Glass Min. Wool	20%	Other
2-5519-0410		Grey/Silver Fibrous Heterogeneous	Teased		None Detected	60% 15%	Glass Min. Wool	25%	Other
2-5519-0411		Grey/Silver Fibrous Heterogeneous	Teased		None Detected	60% 20%	Glass Min. Wool	20%	Other
2-5519-0512		Brown Fibrous Heterogeneous	Teased		None Detected	60%	Cellulose	40%	Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Thomas Ferrante
Tom Ferrante
Analyst

R. K. Mahoney
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Signatory

estmont, NJ 609-858-4800 | Piscataway, NJ 908-981-0550 | Carle Place, NY 516-997-7251 | Manhattan, NY 212-290-0052 | Seattle, WA 206-233-9007 | Ann Arbor, MI 313-668-6810 | San Mateo, CA 415-570-5401 | Smyrna, GA 404-333-6066 | Greensboro, NC 910-297-1487 | Houston, TX 713-686-3635

EMSL

Alpha Environmental Sciences, Inc.
105 Wappoo Creek Drive
Charleston, SC 29412

Thursday, May 01, 1997

Ref Number: NC972348

POLARIZED LIGHT MICROSCOPY (PLM)

Project: 6439.01-AI

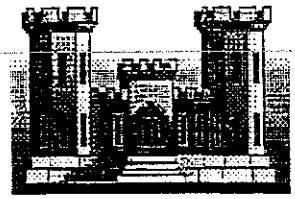
SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS %	ASBESTOS TYPE	NONASBESTOS %	NONASBESTOS FIBROUS	NONASBESTOS %	NONASBESTOS NONFIBROUS
2-5519-0513		Brown Fibrous Heterogeneous	Teased		None Detected	40%	Cellulose	60%	Other
2-5519-0514		Brown/White Fibrous Heterogeneous	Teased		None Detected	60%	Cellulose	40%	Other
2-5519-0615		Brown/White Fibrous Heterogeneous	Teased		None Detected	60% 5%	Cellulose Glass	35%	Other
2-5519-0616		Brown/White Fibrous Heterogeneous	Teased		None Detected	30% 10%	Cellulose Glass	60%	Other
2-5519-0617		Brown/White Fibrous Heterogeneous	Teased		None Detected	80% 5%	Cellulose Glass	15%	Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Thomas Ferrante
Tom Ferrante
Analyst

R. K. Mahoney
Approved
Signatory

TECHNICAL PROVISIONS



US Army Corps
of Engineers

FOR

ASBESTOS TESTING/ABATEMENT
JSOC FACILITY
FORT BRAGG, NC

Inspector Tim L. Duke # HC 10205

PREPARED BY THE

DIRECTORATE OF PUBLIC WORKS

AND ENVIRONMENT

FORT BRAGG, N.C.

SPECIFICATION NO.

FW-00678-4
DPWE 5663

DRAWING NO.

21 April 1997

Asbestos Inspection Report
Fort Bragg, North Carolina

Building No. 2-5519

Summary

Building No. 2-5519 is of block construction with a shingled roof. The exterior is pressboard siding and a plywood soffit. Suspect materials included floor tile, mastic, ceiling tile, wallboard, spray-on ceiling material and roofing materials. No asbestos containing materials were found.

Homogeneous Area: H01 Roofing Shingles and Felt

Homogeneous area H01 is the roof shingles and felt paper used on the roof of the building.

Sample No.	Location	% Asbestos/ Type
2-5519-0101	Roof	None Detected
2-5519-0102	Roof	None Detected

Homogeneous Area: H02 Floor Tile and Mastic

Homogeneous area H02 is the 12" x 12", gray floor tile and mastic used in the small office only.

Sample No.	Location	% Asbestos/ Type
2-5519-0203	Office	None Detected
2-5519-0204	Office	None Detected
2-5519-0205	Office	None Detected

Homogeneous Area: H03 Spray-on Ceiling Material

Homogeneous area H03 is the white, sprayed-on ceiling surfacing material used in the rear half of the building.

Sample No.	Location	% Asbestos/ Type
2-5519-0306	Hall	None Detected
2-5519-0307	Hall	None Detected
2-5519-0308	Large room	None Detected

Homogeneous Area: H04 Ceiling Tiles

Homogeneous area H04 is the 2' x 2', white ceiling tiles used in the Hall and office areas only.

Sample No.	Location	% Asbestos/ Type
2-5519-0409	Office	None Detected
2-5519-0410	Office	None Detected
2-5519-0411	Office	None Detected

Homogeneous Area: H05 Ceiling Wallboard

Homogeneous area H05 is the sheetrock material used on the ceiling in the rear half of the building.

Sample No.	Location	% Asbestos/ Type
2-5519-0512	Office	None Detected
2-5519-0513	Office	None Detected
2-5519-0514	Office	None Detected

Homogeneous Area: H06 Wallboard

Homogeneous area H06 is the sheetrock wallboard used on the walls in the Hall and office areas.

Sample No.	Location	% Asbestos/ Type
2-5519-0615	Office	None Detected
2-5519-0616	Office	None Detected
2-5519-0617	Office	None Detected

Westmont, NJ 609-858-4800 | Piscataway, NJ 908-981-0550 | Carle Place, NY 516-997-7251 | Manhattan, NY 212-290-0052 | Seattle, WA 206-233-9007 | Ann Arbor, MI 313-668-6810 | San Mateo, CA 415-570-5401 | Smyrna, GA 404-333-6066 | Greensboro, NC 910-297-1487 | Houston, TX 713-686-3635

EMSL

Alpha Environmental Sciences, Inc.
105 Wappoo Creek Drive
Charleston, SC 29412

Thursday, May 01, 1997

Ref Number: NC972348

POLARIZED LIGHT MICROSCOPY (PLM)

Project: 6439.01-AI

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS %	ASBESTOS TYPE	NONASBESTOS %	NONASBESTOS FIBROUS	NONASBESTOS %	NONASBESTOS NONFIBROUS
2-5519-0101		Black Fibrous Homogeneous	Dissolved/Teased		None Detected	20%	Cellulose	50%	Other
						30%	Glass		
2-5519-0102		Black Fibrous Heterogeneous	Dissolved/Teased		None Detected	40%	Cellulose	35%	Other
						25%	Glass		
2-5519-0203		White Non-Fibrous Homogeneous	Dissolved/Teased		None Detected			100%	Other
2-5519-0204		White Non-Fibrous Homogeneous	Dissolved/Teased		None Detected			100%	Other
2-5519-0205		White Non-Fibrous Homogeneous	Dissolved/Teased		None Detected			100%	Other
2-5519-0306		White Fibrous Homogeneous	Teased		None Detected	< 1%	Cellulose	100%	Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Thomas Ferrante
Tom Ferrante
Analyst

R. K. Mahoney
Approved
Signatory

Westmont, NJ 609-858-4800 | Piscataway, NJ 908-981-0550 | Carle Place, NY 516-997-7251 | Manhattan, NY 212-290-0052 | Seattle, WA 206-233-9007 | Ann Arbor, MI 313-668-6810 | San Mateo, CA 415-570-5401 | Smyrna, GA 404-333-6066 | Greensboro, NC 910-297-1487 | Houston, TX 713-686-3635

EMSL

Alpha Environmental Sciences, Inc.
105 Wappoo Creek Drive
Charleston, SC 29412

Thursday, May 01, 1997

Ref Number: NC972348

POLARIZED LIGHT MICROSCOPY (PLM)

Project: 6439.01-AI

				ASBESTOS		NONASBESTOS	
SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	%	TYPE	% FIBROUS	% NONFIBROUS
2-5519-0307		White Fibrous Homogeneous	Teased		None Detected	< 1% Cellulose	100% Other
2-5519-0308		White Fibrous Homogeneous	Teased		None Detected	< 1% Cellulose	100% Other
2-5519-0409		Grey/Silver Fibrous Heterogeneous	Teased		None Detected	60% Glass 20% Min. Wool	20% Other
2-5519-0410		Grey/Silver Fibrous Heterogeneous	Teased		None Detected	60% Glass 15% Min. Wool	25% Other
2-5519-0411		Grey/Silver Fibrous Heterogeneous	Teased		None Detected	60% Glass 20% Min. Wool	20% Other
2-5519-0512		Brown Fibrous Heterogeneous	Teased		None Detected	60% Cellulose	40% Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Thomas Ferrante
Tom Ferrante
Analyst

R. K. Mahoney
Approved
Signatory

estmont, NJ 609-858-4800 | Piscataway, NJ 908-981-0550 | Carle Place, NY 516-997-7251 | Manhattan, NY 212-290-0052 | Seattle, WA 206-233-9007 | Ann Arbor, MI 313-668-6810 | San Mateo, CA 415-570-5401 | Smyrna, GA 404-333-6066 | Greensboro, NC 910-297-1487 | Houston, TX 713-686-3635

EMSL

Alpha Environmental Sciences, Inc.
105 Wappoo Creek Drive
Charleston, SC 29412

Thursday, May 01, 1997

Ref Number: NC972348

POLARIZED LIGHT MICROSCOPY (PLM)

Project: 6439.01-AI

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS %	ASBESTOS TYPE	NONASBESTOS %	NONASBESTOS FIBROUS	NONASBESTOS %	NONASBESTOS NONFIBROUS
2-5519-0513		Brown Fibrous Heterogeneous	Teased		None Detected	40%	Cellulose	60%	Other
2-5519-0514		Brown/White Fibrous Heterogeneous	Teased		None Detected	60%	Cellulose	40%	Other
2-5519-0615		Brown/White Fibrous Heterogeneous	Teased		None Detected	60% 5%	Cellulose Glass	35%	Other
2-5519-0616		Brown/White Fibrous Heterogeneous	Teased		None Detected	30% 10%	Cellulose Glass	60%	Other
2-5519-0617		Brown/White Fibrous Heterogeneous	Teased		None Detected	80% 5%	Cellulose Glass	15%	Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Thomas Ferrante
Tom Ferrante
Analyst

R. K. Mahoney
Approved
Signatory

TECHNICAL PROVISIONS

US Army Corps
of Engineers

FOR

ASBESTOS TESTING/ABATEMENT
JSOC FACILITY
FORT BRAGG, NC

Inspector Tony L. Duke
NC 10215

PREPARED BY THE

DIRECTORATE OF PUBLIC WORKS

AND ENVIRONMENT

FORT BRAGG, N.C.

SPECIFICATION NO.

FW-00678-4
DPWE 5663

DRAWING NO.

21 April 1997

HUB TESTING LABORATORIES

Consulting and Testing Engineers

95 Beaver Street — Waltham, Mass. 02154 — (617) 893-8330

FIELD REPORT FOR BULK SAMPLING

REPORT FOR: DIRECTORATE OF CONTRACTING
FORT BRAGG, NC

PROJECT: T2-5807

BUILDING DESCRIPTION: One Story Sheet Metal Ceiling and Roof

SAMPLING LOCATION:	CONDITION	SAMPLE NO.
Open storage space studded wall/ceiling		
No heat or water		
No suspect material		

HUB TESTING LABORATORIES

Consulting and Testing Engineers

95 Beaver Street — Waltham, Mass. 02154 — (617) 893-8330

FIELD REPORT FOR BULK SAMPLING

REPORT FOR: Directorate of Contracting
Fort Bragg, NC

PROJECT: T2-5517

BUILDING DESCRIPTION: One Story Vinyl Siding

SAMPLING LOCATION	CONDITION	SAMPLE NO.
Boiler Room - On Boiler 250 Sq. Feet	Poor	1
Garage Area - NSM		
Hallway - NSM		
Men's & Ladies' Bathroom - NSM		
NSM Above Dropped In Ceiling		

Asbestos Inspection Report
Fort Bragg, North Carolina

Building No. 2-6105

Summary

Building No. 2-6105 is used as a warehouse. The building is of block construction with a wood rafter, shingled roof and a concrete floor. Suspect material included the roofing material and window putty. No asbestos containing material was found.

Homogeneous Area: H01 Window Putty

Homogeneous area H01 is the window putty used on the windows of the building.

Sample No.	Location	% Asbestos/ Type
2-6105-0101	Window Frame	None Detected
2-6105-0102	Window Frame	None Detected
2-6105-0103	Window Frame	None Detected

Homogeneous Area: H02 Roofing Materials

Homogeneous area H02 is the roof shingles and felt material used on the roof of the building.

Sample No.	Location	% Asbestos/ Type
2-6105-0204	Roof	None Detected
2-6105-0205	Roof	None Detected
2-6105-0206	Roof	None Detected

HUB TESTING LABORATORIES

Consulting and Testing Engineers

95 Beaver Street — Waltham, Mass. 02154 — (617) 893-8330

FIELD REPORT FOR BULK SAMPLING

REPORT FOR: DIRECTORATE OF CONTRACTING
FORT BRAGG, NC

PROJECT: T2-5807

BUILDING DESCRIPTION: One Story Sheet Metal Ceiling and Roof

SAMPLING LOCATION:	CONDITION	SAMPLE NO.
Open storage space studded wall/ceiling		
No heat or water		
No suspect material		

HUB TESTING LABORATORIES

Consulting and Testing Engineers

95 Beaver Street — Waltham, Mass. 02154 — (617) 893-8330

FIELD REPORT FOR BULK SAMPLING

REPORT FOR: Directorate of Contracting
Fort Bragg, NC

PROJECT: T2-5517

BUILDING DESCRIPTION: One Story Vinyl Siding

SAMPLING LOCATION	CONDITION	SAMPLE NO.
Boiler Room - On Boiler 250 Sq. Feet	Poor	1
Garage Area - NSM		
Hallway - NSM		
Men's & Ladies' Bathroom - NSM		
NSM Above Dropped In Ceiling		

Asbestos Inspection Report
Fort Bragg, North Carolina

Building No. 2-6105

Summary

Building No. 2-6105 is used as a warehouse. The building is of block construction with a wood rafter, shingled roof and a concrete floor. Suspect material included the roofing material and window putty. No asbestos containing material was found.

Homogeneous Area: **H01 Window Putty**

Homogeneous area H01 is the window putty used on the windows of the building.

Sample No.	Location	% Asbestos/ Type
2-6105-0101	Window Frame	None Detected
2-6105-0102	Window Frame	None Detected
2-6105-0103	Window Frame	None Detected

Homogeneous Area: **H02 Roofing Materials**

Homogeneous area H02 is the roof shingles and felt material used on the roof of the building.

Sample No.	Location	% Asbestos/ Type
2-6105-0204	Roof	None Detected
2-6105-0205	Roof	None Detected
2-6105-0206	Roof	None Detected

Westmont, NJ 609-858-4800 | Piscataway, NJ 908-981-0550 | Carle Place, NY 516-997-7251 | Manhattan, NY 212-290-0052 | Seattle, WA 206-233-9007 | Ann Arbor, MI 313-668-6810 | San Mateo, CA 415-570-5401 | Smyrna, GA 404-333-6066 | Greensboro, NC 910-297-1487 | Houston, TX 713-686-3635

EMSL

Alpha Environmental Sciences
400 Dellwood Rd. Bldg.6A Ste 2
P.O.Box 31
Waynesville, NC 28786

Thursday, January 16, 1997

Ref Number: NC97148

POLARIZED LIGHT MICROSCOPY (PLM)

Project: Project No. 6439.01 AI - Bldg.2-6105

SAMPLE	LOCATION	APPEARANCE	SAMPLE TREATMENT	ASBESTOS %	ASBESTOS TYPE	NONASBESTOS %	NONASBESTOS FIBROUS	NONASBESTOS %	NONASBESTOS NONFIBROUS
0101		Grey Non-Fibrous Homogeneous	Teased		None Detected			100%	Other
0102		Grey Non-Fibrous Homogeneous	Teased		None Detected			100%	Other
0103		Grey Non-Fibrous Homogeneous	Teased		None Detected			100%	Other
0204		Grey/Black Fibrous Heterogeneous	Dissolved/Teased		None Detected	60%	Cellulose	40%	Other
0205		Grey/Black Fibrous Heterogeneous	Dissolved/Teased		None Detected	60%	Cellulose	40%	Other
0206		Grey/Black Fibrous Heterogeneous	Dissolved/Teased		None Detected	60%	Cellulose	40%	Other

Comments: For all obviously heterogeneous samples easily separated into subsamples, and for layered samples, each component is analyzed separately. Also, "# of Layers" refers to number of separable subsamples.

Thomas Ferrante
Tom Ferrante
Analyst

R.K. Mahoney
Approved
Signatory

GEO-ENVIRONMENTAL SERVICES, INC.
3277 Roswell Road, Suite 711
Atlanta, Georgia 30305
404 - 257-9303

GES JOB NO. BSA 102-69

DATE 7/27/86

BULK SAMPLE ANALYSIS

PROJECT NAME Fort Bragg

CLIENT NAME Environmental Management, Inc.

SAMPLE I.D. NO 25517 A1 GES LAB NO. 10830

SAMPLE LOCATION Not given

GROSS SAMPLE APPEARANCE White fibrous, grey semi-hard compact silty to fibrous with paint

	PERCENT BY VOLUME VISUALLY ESTIMATED*
ASBESTOS FIBERS	
Chrysotile	15
Amosite	
Crocidolite	
Actinolite	
Tremolite	
Anthophyllite	
NON FIBROUS MATERIALS	
Perlite	
Vermiculite	
BINDERS	25

	PERCENT BY VOLUME VISUALLY ESTIMATED*
NON ASBESTOS FIBERS	
Glass fibers	
Mineral Wool	60
Cellulose/Paper or wood fibers	
Animal hair	
Synthetics	
OTHERS	

COMMENTS Paint included as binders. Asbestos found in grey semi-hard compact silty to fibrous material.

** Sample components are identified by polarized light microscopy coupled with dispersion staining methods.*

MICROANALYST: John T. Razzolini

QUALITY CONTROL BY: Susan J. Harper

GEO-ENVIRONMENTAL SERVICES, INC.
3277 Roswell Road, Suite 711
Atlanta, Georgia 30305
404 - 257-9303

GES JOB NO. BSA 102-69

DATE 7/27/86

BULK SAMPLE ANALYSIS

PROJECT NAME Fort Bragg

CLIENT NAME Environmental Management, Inc.

SAMPLE I.D. NO. 25517 A2 GES LAB NO. 10831

SAMPLE LOCATION Not given

GROSS SAMPLE APPEARANCE Grey semi-hard compact fibrous to powdery with paint

	PERCENT BY VOLUME VISUALLY ESTIMATED*
ASBESTOS FIBERS	
Chrysotile	65
Amosite	1
Crocidolite	
Actinolite	
Tremolite	
Anthophyllite	
NON FIBROUS MATERIALS	
Perlite	
Vermiculite	
BINDERS	33

	PERCENT BY VOLUME VISUALLY ESTIMATED*
NON ASBESTOS FIBERS	
Glass fibers	
Mineral Wool	
Cellulose (Paper or wood fibers	
Animal hair	
Synthetics	
OTHERS	
Picrolite	1

COMMENTS Paint included as binders

** Sample components are identified by polarized light microscopy coupled with dispersion staining methods.*

MICROANALYST: John T. Razzolini

QUALITY CONTROL BY: Susan J. Harper

GEO-ENVIRONMENTAL SERVICES, INC.
3277 Roswell Road, Suite 711
Atlanta, Georgia 30305
404 - 257-9303

GES JOB NO. BSA 102-69

DATE 7/27/86

BULK SAMPLE ANALYSIS

PROJECT NAME Fort Bragg

CLIENT NAME Environmental Management, Inc.

SAMPLE I.D. NO. 25517 A3 GES LAB NO. 10832

SAMPLE LOCATION Not given

GROSS SAMPLE APPEARANCE Very light brown powdery and fibrous locally white woven fibrous with paint

	PERCENT BY VOLUME VISUALLY ESTIMATED*
ASBESTOS FIBERS	
Chrysotile	45
Amosite	
Crocidolite	
Actinolite	
Tremolite	
Anthophyllite	
NON FIBROUS MATERIALS	
Perlite	
Vermiculite	
BINDERS	45

	PERCENT BY VOLUME VISUALLY ESTIMATED*
NON ASBESTOS FIBERS	
Glass fibers	
Mineral Wool	
Cellulose/Paper or wood fibers	10
Animal hair	
Synthetics	
OTHERS	

COMMENTS Paint included as binders

** Sample components are identified by polarized light microscopy coupled with dispersion staining methods.*

MICROANALYST:

John T. Razzolini

QUALITY CONTROL BY:

Susan J. Harper

ENVIRONMENTAL

Return to PETT

REPORT FOR:

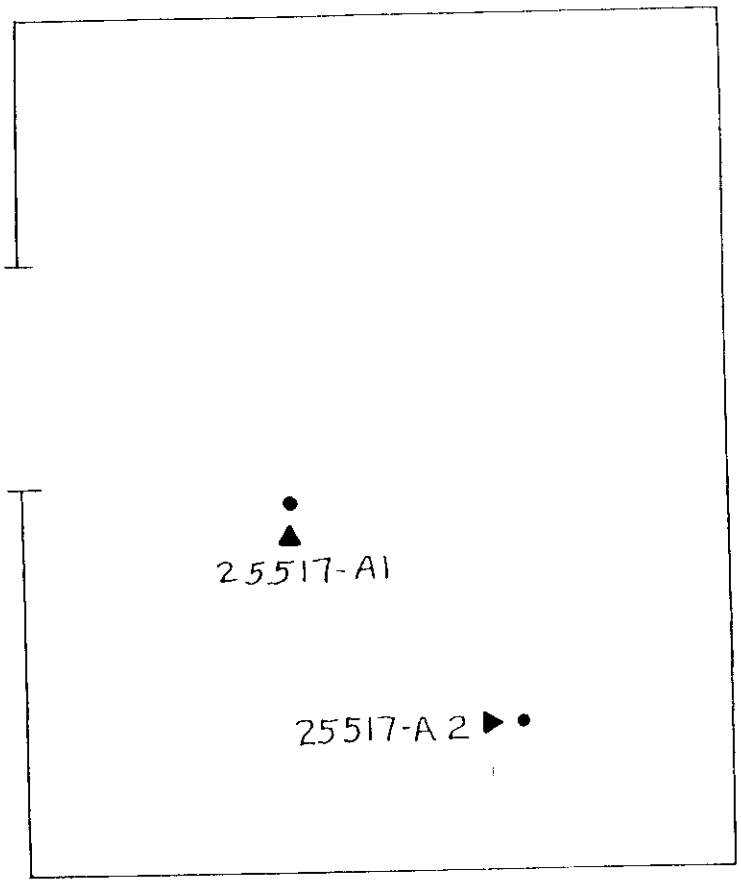
FORT BRAGG
ASBESTOS-CONTAINING MATERIAL SURVEY
EMCS EXTENSION PROJECT
FORT BRAGG, NORTH CAROLINA

PREPARED BY:

ENVIRONMENTAL MANAGEMENT INC
3699 JOHNSON ROAD, N.E.
ATLANTA, GA 30345

JULY 31, 1986

PROJECT NO. DACA21-86-D-0514
RFP "I"
EMI NO. 364316



BUILDING # 25517

MECH. ROOM

HUB TESTING LABORATORIES

Consulting and Testing Engineers

95 Beaver Street — Waltham, Mass. 02154 — (617) 893-8330

781

Prepared For: DEPARTMENT OF THE ARMY
CONTRACTING OFFICER
FORT BRAGG, NORTH CAROLINA

Project: ASBESTOS MATERIALS ASSESSMENT SURVEY ON
FORT BRAGG, NC

Contract No.: DAKF40-87-C-1924

Frederick T. Boyle

FREDERICK T. BOYLE
Vice President

Leonard D. Pagnotto

LEONARD D. PAGNOTTO
Certified Industrial Hygienist
CIH # 516

150.782

HUB TESTING LABORATORIES

Consulting and Testing Engineers

95 Beaver Street — Waltham, Mass. 02154 — (617) 893-8330

FIELD REPORT FOR BULK SAMPLING

REPORT FOR: Directorate of Contracting
Fort Bragg, NC

PROJECT: T2-5713

BUILDING DESCRIPTION: One Story Plastic Siding

SAMPLING LOCATION	CONDITION	SAMPLE NO.
Compressor Room - NSM		
Bathroom - NSM		
Elbows Different Sizes - Long Runs		
Pipes/Elbows Covered With Fiberglass		
Steam Provided by High Pressure Boiler Room		
Next Door		
COR Office - NSM		
Ladies Restroom Near Laundry Pick Up		
Entrance Water LIne Over Door 4"	Fair	5713-1
Corrugated, Approximately 15'		
Small Hallway Oktside Ladies Restroom		

SAMPLING LOCATION	CONDITION	SAMPLE NO.
Continuation of 4" Pipe - 5' -		
Men's Latrine Near Laundry Pick-up Entrance		
2 Water Pipes 3", Approximately 22'	Fair	5713-2
Supply Room/Parts Room - 24' of 3" Corrugated Pipe	Fair	5713-3
Maintenance Shop - 20' of 3" Pipe, Continuation From Parts Room	Fair	Same As 5713-6
Men's Latrine Near Laundry Drop Off Entrance - 8' of 3" plumbing Line	Fair	5713-4
Hallway Across From Laundry Drop Off Desk - 48' of 4" Pipe	Fair	Same As 5713-6
Elbows From These Pipes ARe the Same Type Of Hard Packed Material	Fair	5713-5
Soap Supply Room - 35' of 4" Corrugated Pipe		
Ladies Restroom in Break Room		
35' of 3" Water Line	Fair	Same As 5713-7
40' of 4" Water Line	Fair	Same As 5713-8
Laundry Managers Office - No Suspect Material		

BUILDINGS SURVEYED WITH SAMPLE ANALYSES

BUILDING NUMBER	SAMPLE NUMBER	SAMPLE LOCATION	TYPE	ASBESTOS CONTENT
T2-5411	3	60 - 6" ELBOWS	MNCH	0
T2-5411	4	40 - 4" ELBOWS	CELL	0
T2-5411	4	40 - 4" ELBOWS	CACO	0
T2-5411	5	700 SF ON HOT WATER TANKS	CELL	0
T2-5411	5	700 SF ON HOT WATER TANKS	CACO	0
T2-5517	1	BOILER	CHRY	20
T2-5517	1	BOILER	MNCH	0
T2-5517	1	BOILER	CACO	0
T2-5713	1	ENTRANCE WTR LN OVER DOOR	AMOS	30
T2-5713	1	ENTRANCE WTR LN OVER DOOR	CHRY	20
T2-5713	1	ENTRANCE WTR LN OVER DOOR	CACO	0
T2-5713	1	ENTRANCE WTR LN OVER DOOR	MNCH	0
T2-5713	2	2 WATER PIPES 3"	CHRY	20
T2-5713	2	2 WATER PIPES 3"	AMOS	10
T2-5713	2	2 WATER PIPES 3"	CACO	0
T2-5713	3	SUPPLY RM-24' OF 3" PIPE	CHRY	30
T2-5713	3	SUPPLY RM-24' OF 3" PIPE	GLAS	0
T2-5713	3	SUPPLY RM-24' OF 3" PIPE	SYNT	0
T2-5713	4	MENS RR-8' OF 3" PIPE	CHRY	30
T2-5713	4	MENS RR-8' OF 3" PIPE	AMOS	10
T2-5713	4	MENS RR-8' OF 3" PIPE	CACO	0
T2-5713	5	ELBOW FR PIPES-PACK MAT	CHRY	5
T2-5713	5	ELBOW FR PIPES-PACK MAT	CACO	0
T2-5713	6	MAINT SHOP-20' OF 3" PIPE	CHRY	30

BUILDINGS SURVEYED WITH SAMPLE ANALYSES

BUILDING NUMBER	SAMPLE NUMBER	SAMPLE LOCATION	TYPE	ASBESTOS CONTENT
T2-5713	6	MAINT SHOP-20' OF 3" PIPE	GLAS	0
T2-5713	6	MAINT SHOP-20' OF 3" PIPE	SYNT	0
T2-5713	7	LADIES RR-35' OF 3" PIPE	CHRY	30
T2-5713	7	LADIES RR-35' OF 3" PIPE	GLAS	0
T2-5713	7	LADIES RR-35' OF 3" PIPE	SYNT	0
T2-5713	8	LAD RM 40'OF 4"WATER LIN	CHRY	30
T2-5713	8	LAD RM 40'OF 4"WATER LIN	GLAS	0
T2-5713	8	LAD RM 40'OF 4"WATER LIN	SYNT	0
T2-5713	9	HALLWAY-48' OF 4" PIPE	CHRY	30
T2-5713	9	HALLWAY-48' OF 4" PIPE	GLAS	0
T2-5713	9	HALLWAY-48' OF 4" PIPE	SYNT	0
T2-5807	0			0

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Supplemental Asbestos Survey

Building No. 4661 Ft. Bragg, North Carolina

Prepared by Timothy A. Jones

Approved for public release, distribution is unlimited

Asbestos Survey **November 2002**

Building 4661, Fort Bragg, NC

by Timothy A. Jones

Final report

Prepared for **US Army Corps of Engineers**
Savannah District

Asbestos Inspection Report

Introduction

Scope of the Investigation

This report documents the supplemental asbestos inspection and survey of Building No.4661 at Fort Bragg, North Carolina conducted on 25 September 2002 by Savannah District US Army Corps of Engineers employees Tim Jones and Jack Ford. The survey was conducted in general accordance with the regulatory guidelines in the Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763 Subpart E Sections 763.80-763.88) and "Guidance for Controlling Asbestos-Containing Materials in Buildings" (Purple Book) (EPA publication number 560/5-85-024). Although not required by the AHERA guidelines, roof and other exterior miscellaneous materials were also inspected and sampled.

Background

Building No. 4661 is a single story wood frame structure with a concrete slab floor in the kitchen area and a wood floor system in the dining area and latrine. The roof system is asphalt shingles over wood decking. The building was originally built to be a mess hall and still contains some kitchen equipment. The original portion of the building was reportedly built in 1948 with the addition of latrines in 1991. Interior finishes have been remodeled at an undisclosed time.

Description of study

Investigation

All accessible areas of Building No. 4661 were visually inspected to verify materials identified in the original asbestos report compiled by Law Environmental dated 25-26 October 1993. In addition, an accredited inspector sampled roofing materials and other suspect materials omitted in the original inspection. This report details ACM as identified at the time of inspection only.

The bulk samples were analyzed by Hygeia Laboratories, Inc. Hygeia is accredited by the National Voluntary Laboratory Accredited Program (NVLAP Accreditation sponsored by the National Institute of Standards and Technology (NIST)). A copy of their accreditation certificates is included in Appendix C. The samples were analyzed by the accepted method of polarized light microscopy (PLM) using EPA's "Method For the

Determination of Asbestos In Bulk Building Materials", EPA/600/R-93/116. Hygeia's analytical report is included in Appendix A.

In compliance with the AHERA regulations, material is considered an Asbestos Containing Material (ACM) when it contains greater than one percent asbestos. Likewise, in this report, any material containing concentrations greater than one percent asbestos will be considered "positive". A narrative discussion of the AHERA ACM types (i.e., thermal systems insulation, miscellaneous and surfacing materials) found in Building No. 4661 is included in this report where relevant. Bulk sample information appears on Table 1. Estimated quantities of individual asbestos containing materials appear on Table 2. Material characterization of asbestos containing materials appears on Table 3. Photographs of the positive materials, when available, appear as Figures. The specific location where each bulk sample was obtained is shown on the building floor plans, which appear as Figures. Positive ACM samples are highlighted on the floor plan Figures and, where possible, locations of positive ACM are identified. It is reasonable to assume that all materials similar to those testing positive, also contain positive amounts of asbestos and should be treated as such.

Analysis

Thermal Systems Insulation (TSI)

TSI is insulation material applied to pipes, fittings, tanks, ducts, or for other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

All TSI inspected in Building 4661 is of non-asbestos materials.

Miscellaneous Materials

Miscellaneous materials include building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and do not include surfacing or TSI. In the past, there were a great number of miscellaneous building materials that had asbestos fibers added to them during the manufacturing process to increase durability and fireproofing qualities. The following suspect miscellaneous materials at Building No. 4661 were found to contain or were assumed to contain asbestos:

a. *Roofing Materials:* The roof shingles and felt were sampled and found to be non-asbestos materials. Some remnants of roofing cement were noted on metal roof vents and this cement is assumed to be asbestos containing. – (Refer to Table 1 for specific information and Figure 1 for sample locations).

b. *Flooring Materials:* 9" X 9" black floor tiles and their associated mastic in the dining area were identified by Law Engineering to be asbestos containing. No

other flooring materials were found to contain asbestos - (Refer to Tables 2 and 3 for specific information and Figure 2 for homogeneous area locations).

c. *Cement Wall Board:* Asbestos containing cement wallboard (similar to Transite ™) is applied to the wall at the location of the range hood from the floor to the ceiling. This material is approximately ¼ " thick and is in approximately 4' X 8' sheets and appears to be screwed to the wall framing - (Refer to Tables 1, 2 and 3 for specific information, Figure 1 for sample location and Figure 4 for homogeneous area locations).

Surfacing

Surfacing material is friable material that is sprayed on, troweled on, or otherwise applied to surfaces for decorative or other purposes.

a. *Drywall Joint Compound:* Gypsum drywall joint compound applied to old brown painted gypsum board wall and peaked ceiling covering above the newer flat ceiling in the dining and kitchen areas contains positive amounts of asbestos. This older drywall appears to have been removed from the location of the newer flat ceiling down to the floor and was only located in the "attic" space – (Refer to Tables 1, 2 and 3 for specific information and Figure 3 for homogeneous area locations).

Conclusions

The following materials found at Building No. 4661 contain positive amounts of asbestos:

a. *Mastic:* The 9"x 9" floor tiles and their associated mastic in the dining area contain asbestos.

b. *Roofing Cement:* Black roofing cement on vents through the roof is assumed to contain asbestos.

c. *Drywall Joint Compound:* Joint compound on older wall and ceiling board in the attic contains asbestos.

d. *Cement Board:* Asbestos cement board behind the kitchen exhaust hood contains asbestos.

List of Tables

List of Figures

Appendix

U.S. ARMY CORPS OF ENGINEERS
ENVIRONMENTAL & MATERIALS UNIT

TABLE 1
SUSPECT ACM SAMPLES
Ft. BRAGG, BUILDING 4661

FIELD ID	DESCRIPTION	LOCATION	ASBESTOS TYPE & %
4661-1-1	**Asbestos cement board**	**Kitchen area, at exhaust hood**	**40% chrysotile**
4661-1-2	Drywall joint compound	Restroom wall	None
4661-1-3	Gypsum wall board	Restroom wall	None
4661-1-4	Ceiling tile	Restroom ceiling	None
4661-1-5	Drywall joint compound	Restroom wall	None
4661-1-6	Drywall joint compound	Storage room wall	None
4661-A-7	Attic insulation	Attic, above storage room	None
4661-A-8	Fiberboard	Attic, above storage room	None
4661-A-9	**Drywall joint compound**	**Attic, above storage room**	**1.5% chrysotile by point count method**
4661-A-10	Gypsum wall board	Attic, above storage room	None
4661-1-11	Drywall joint compound	Kitchen area ceiling	None
4661-A-12	**Drywall joint compound**	**Attic, above dining area**	**1.25% chrysotile by point count method**
4661-A-13	Gypsum wall board	Attic, above dining area	None
4661-1-14	Drywall joint compound	Kitchen area ceiling	None
4661-1-15	Drywall joint compound	Dining area ceiling	None
4661-1-16	Drywall joint compound	Dining area ceiling	None
4661-R-17	Roof shingle	Roof field	None
4661-R-18	Roof felt	Roof field	None

Samples testing positive for asbestos indicated in **BOLD** type

TABLE 2
ACM QUANTITY SUMMARY
Ft. BRAGG, BUILDING 4661

Material Descriptions	Units	Area Descriptions							
		DINING AREA	ROOF	KITCHEN AREA					Totals
Roofing Cement	S.F.		10						10
Floor Tile & Mastic	S.F.	1800							1800
Asbestos Cement Board	S.F.			130					130
Drywall Joint Compound *	S.F.	2100		1200					3300

S.F. = Square Foot, L.F. = Linear Foot, C.F. = Cubic Foot

***** **Total area of drywall estimated**

TABLE 3
MATERIAL CHARACTERIZATION AND ASSESSMENT
Ft. BRAGG, BUILDING 4661

MATERIAL		CHARACTERISTICS			ASSESSMENT	
Type	**Description**	**Asbestos Yes/no/assumed**	**Quantity (If ACM)**	**Friable / Non-friable**	**Condition**	**Disturbance Potential**
Miscellaneous	Roofing cement	Assumed	10 S.F.	Non-friable	Good	Low
Miscellaneous	Floor Tile & Mastic	Yes 2-15 %	1800 S.F.	Non-friable	Damaged	High
Miscellaneous	Asbestos Cement Board	Yes 40%	130 S.F.	Non-friable	Good	Low
Surfacing	Drywall Joint Compound *	Yes 1.5%	3300S.F.	Friable	Damaged	Low

S.F. = Square Foot, L.F. = Linear Foot, C.F. = Cubic Foot

***** **Total area of drywall estimated**

Figure 1

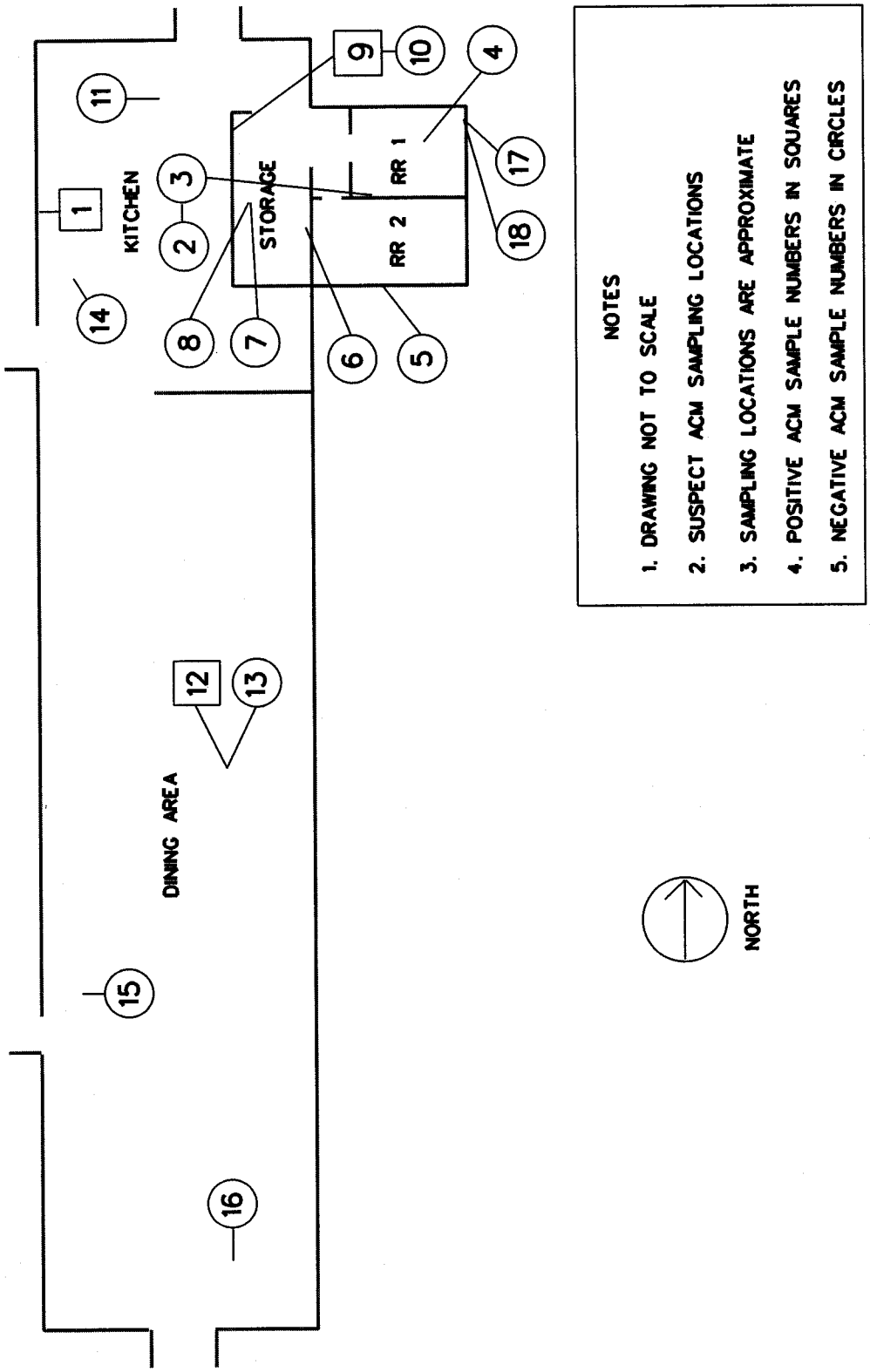

KITCHEN
STORAGE
RR 1
RR 2
DINING AREA
NORTH
NOTES
1. DRAWING NOT TO SCALE
2. SUSPECT ACM SAMPLING LOCATIONS
3. SAMPLING LOCATIONS ARE APPROXIMATE
4. POSITIVE ACM SAMPLE NUMBERS IN SQUARES
5. NEGATIVE ACM SAMPLE NUMBERS IN CIRCLES

Figure 2

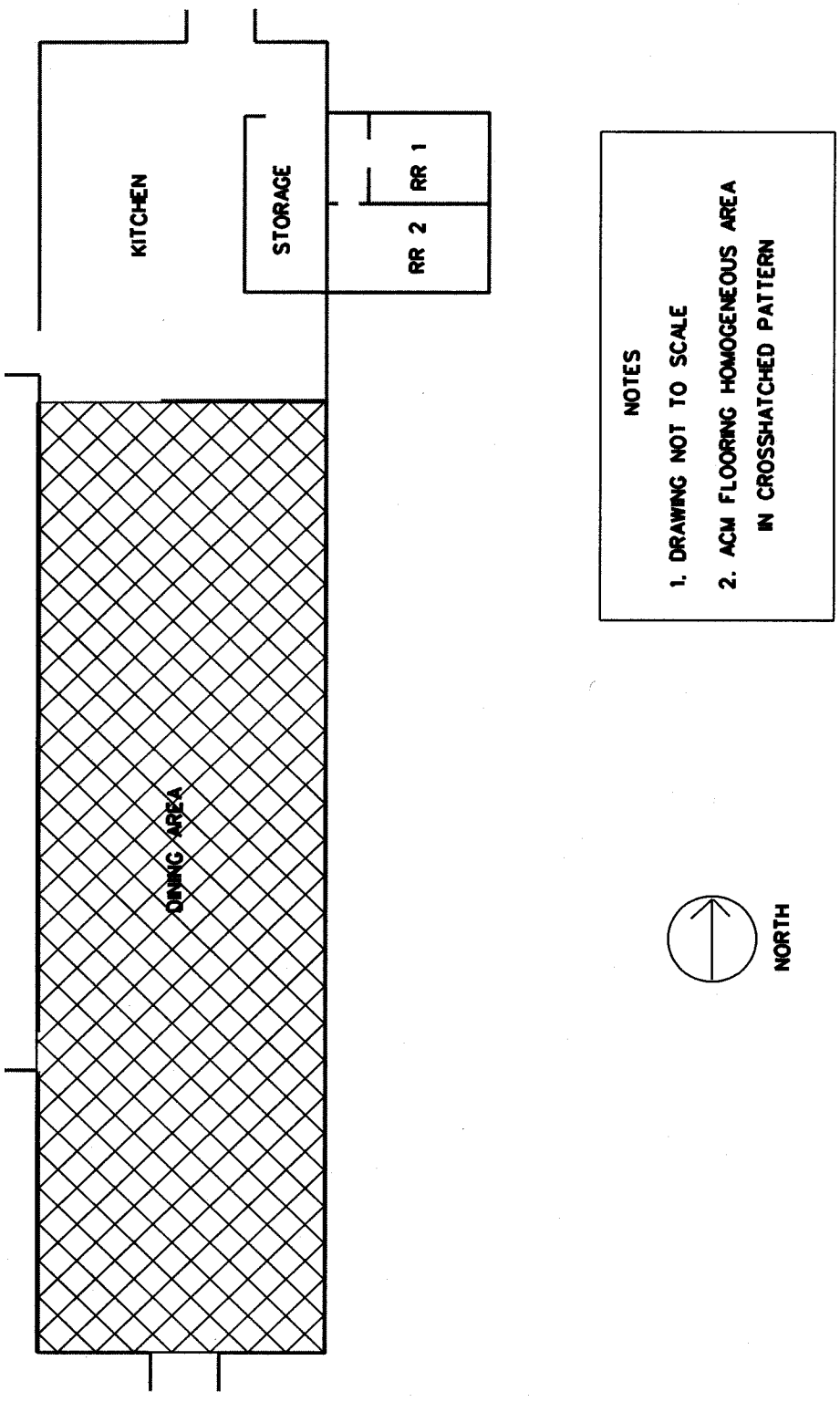

KITCHEN
STORAGE
RR 1
RR 2
DINING AREA
NOTES
1. DRAWING NOT TO SCALE
2. ACM FLOORING HOMOGENEOUS AREA IN CROSSHATCHED PATTERN
NORTH

Figure 3

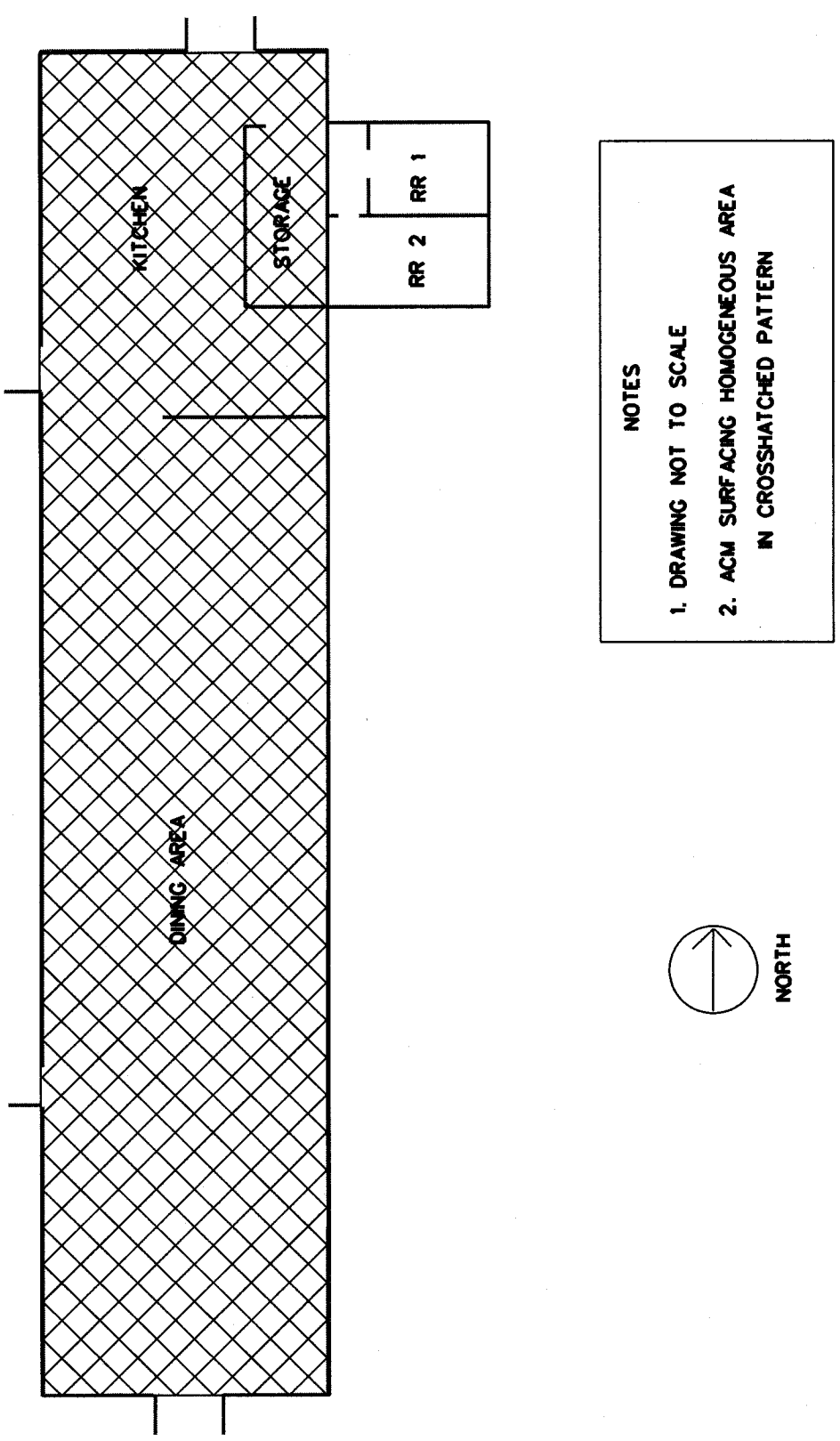
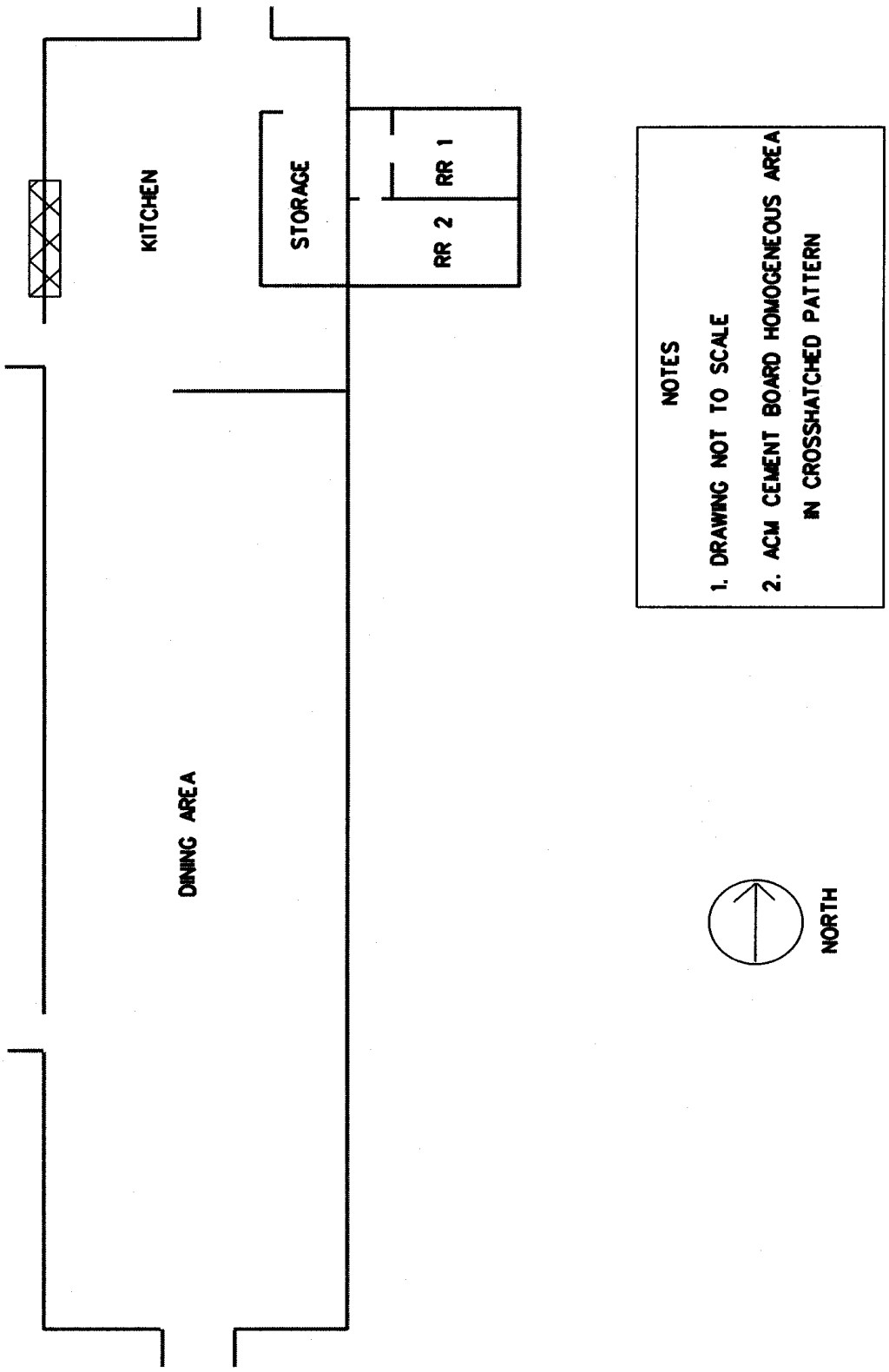

KITCHEN
STORAGE
RR 1
RR 2
DINING AREA
NOTES
1. DRAWING NOT TO SCALE
2. ACM SURFACING HOMOGENEOUS AREA IN CROSSHATCHED PATTERN
NORTH

Figure 4


KITCHEN
STORAGE
RR 1
RR 2
DINING AREA
NOTES
1. DRAWING NOT TO SCALE
2. ACM CEMENT BOARD HOMOGENEOUS AREA IN CROSSHATCHED PATTERN
NORTH

Appendix A

Analytical Report - Hygeia Laboratories, Inc.

HYGEIA LABORATORIES, INC.

1300 Williams Drive, Suite A - Marietta, Georgia 30066-6299 - (770) 514-6933, FAX (770) 514-6966

US Army Corp of Engineers
Environmental & Materials Unit
200 North Cobb Parkway
Bldg. 400, Ste. 404
Marietta, GA 30062

10/4/2002

Subject:

Hygeia Project Number: A0210004
Client Project Number/Name: 7624 /Ft. Bragg Bldg 4661

Dear Mr. Tim Jones:

Enclosed are the analytical results of bulk samples submitted by you to this laboratory on 9/27/2002. All analyses were performed by polarized light microscopy (PLM) in accordance with the EPA method as defined in Perkins and Harvey, July 1993, "Methods for the Determination of Asbestos in Bulk Materials" 61pp. (EPA/600/R-93/116). The reported percentages are volume estimates obtained by calibrated visual estimation. The results in this report apply only to the items tested.

The EPA defines an asbestos containing material (ACM) as a material that is reported to contain greater than one percent asbestos. HYGEIA is only responsible for the accuracy of the analytical results provided in this report and cannot be held responsible for the errors resulting from improper sample collection techniques. This report may not be used to claim product endorsement by NVLAP or any other U.S. Government agency.

For nonhomogeneous samples, each layer was analyzed separately and the results combined to form the reported value except where otherwise noted. Vinyl floor tile samples with negative results by PLM should be submitted for confirmation by transmission electron microscopy (TEM). Friable samples containing less than 10% asbestos as determined by PLM may be resubmitted for point counting at your discretion.

Thank you for using our analytical services. HYGEIA Laboratories has been NVLAP accredited since 1988. Our current NVLAP code is 102087-0. We will keep a copy of this report on file for three years. We will dispose of your samples in 60 days unless you request that we return them. This report my be reproduced only in its entirety with the consent of Hygeia Laboratories, Inc. If you have any questions, please call us at (770) - 514-6933.

Sincerely,

Clayton Call
Asbestos Laboratory Manager

NVLAP# 102087-0
Texas Dept. of Health # 30-0232
Commonwealth of Virginia # 3333-000210

Hygeia Laboratories Inc.
1300 Williams Drive, Suite A
Marietta, GA 30066
(770) 514-6933

PLM Analysis Summary

Hygeia Project Number: A0210004
Client Project Number/Name: 7624 / Ft. Bragg Bldg 4661

Analyzed: 9/27/2002 by CC

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-1	A0210004-01	Gray	Fibrous	Yes	40%								60%	

Comment: **Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-2	A0210004-02	Gray	Powdery	Yes							10%		90%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-3	A0210004-03	Gray	Powdery	Yes						10%			90%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-4	A0210004-04	Gray	Powdery	Yes						30%	10%	10%	50%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-5	A0210004-05	Gray	Powdery	Yes						10%			90%	

Comment: **No Asbestos Detected.**

Hygeia Project Number: A0210004
Client Project Number/Name: 7624 / Ft. Bragg Bldg 4661

Analyzed: 9/27/2002 by JC

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-6	A0210004-06	White	Layered	No							15%		85%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-A-7	A0210004-07	Tan	Fibrous	Yes							90%		10%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-A-8	A0210004-08	Tan	Gummy	No						60%			40%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-A-9	A0210004-09	Tan	Gummy	No	3%					12%			85%	

Comment: **Joint compound: 4% Chrysotile. Rest: NAD. Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-A-10	A0210004-10	Gray	Gummy	No						20%			80%	

Comment: **No Asbestos Detected.**

Hygeia Project Number: A0210004
Client Project Number/Name: 7624 / Ft. Bragg Bldg 4661

Analyzed: 9/27/2002 by JC

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-11	A0210004-11	White	Layered	No						10%			90%	

Comment: **Joint compound: NAD. Rest: NAD. No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-A-12	A0210004-12	Tan	Layered	No	3%					7%			90%	

Comment: **Joint compound: 4% Chrysotile. Rest: NAD. Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-A-13	A0210004-13	White	Layered	No						10%			90%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-14	A0210004-14	White	Layered	No						10%			90%	

Comment: **Joint compound: NAD. Rest: NAD. No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-15	A0210004-15	White	Flaky	No									100%	

Comment: **No Asbestos Detected.**

Hygeia Project Number: A0210004
Client Project Number/Name: 7624 / Ft. Bragg Bldg 4661

Analyzed: 9/27/2002 by JC

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-1-16	A0210004-16	Gray	Powdery	Yes									100%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-R-17	A0210004-17	Black	Gummy	Yes							10%		90%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4661-R-18	A0210004-18	Black	Gummy	Yes						60%			40%	

Comment: **No Asbestos Detected.**

abbreviations:

Chr. = chrysotile
Am. = amosite
Cro. = crocidolite
An. = anthophyllite
T/A = tremolite/actinolite

cell = cellulose
glass = fibrous glass
syn = synthetic
sty = styrene foam
det = detected

per = perlite
ver = vermiculite
MF = Mineral filler
B/F = Binder / filler
NAD = No asbestos detected

OF = Other Fibers
ONF = Other Non-Fibers
Cons = Consolidated

Hygeia Laboratories Inc.
1300 Williams Drive, Suite A
Marietta, GA 30066
(770) 514-6933

10/4/2002

Point Count Summary

Hygeia Project Number: A0210004
Client Project Number/Name: 7624 / Ft. Bragg Bldg 4661

Client Sample #	Hygeia #	Chryso	Amosite	Crocid	Antho	Trem Actin	Binder Matrix
4661-A-9	A0210004-09	1.5%					98.5%

Comments: **6/400 points counted.**

Client Sample #	Hygeia #	Chryso	Amosite	Crocid	Antho	Trem Actin	Binder Matrix
4661-A-12	A0210004-12	1.25%					98.75%

Comments: **5/400 points counted.**

Percentages derived by point counting using the folowing formula:
A/400 X 100% Where A = the total asbestos points counted

Detection Limit is 1% total asbestos.

Appendix B

Sample Chain of Custody Forms

ASBESTOS CHAIN OF CUSTODY - US ARMY CORPS OF ENGINEERS

Project: **Ft. Bragg Bldg 4661**	EMU Job No.: **7624**
Samplers: Tim Jones, Jack Ford	Analysis: PLM

DATE	FIELD ID	EMU ID	COMPONENTS / NOTES
9/25/2002	4661-1-1	44437	Cement board
9/25/2002	4661-1-2	44438	Drywall joint compound
9/25/2002	4661-1-3	44439	Gypsum wall board
9/25/2002	4661-1-4	44440	Ceiling tile
9/25/2002	4661-1-5	44441	Drywall joint compound
9/25/2002	4661-1-6	44442	Drywall joint compound
9/25/2002	4661-A-7	44443	Blown in insulation
9/25/2002	4661-A-8	44444	Fiberboard
9/25/2002	4661-A-9	44445	Drywall joint compound
9/25/2002	4661-A-10	44446	Gypsum wall board
9/25/2002	4661-1-11	44447	Drywall joint compound
9/25/2002	4661-A-12	44448	Drywall joint compound
9/25/2002	4661-A-13	44449	Gypsum wall board
9/25/2002	4661-1-14	44450	Drywall joint compound
9/25/2002	4661-1-15	44451	Drywall joint compound
9/25/2002	4661-1-16	44452	Drywall joint compound
9/25/2002	4661-R-17	44453	Roof shingle
9/25/2002	4661-R-18	44454	Roof felt

Relinquished By	Date	Time	Received By	Date	Time
Tim Jones	9-27-02	1245	C. Cell	9/27/02	

Comments: Fax results to Tim Jones @ 678-354-0330
Contact Tim Jones at 678-354-0310 to determine which samples to point count

Appendix C

Certifications

The Environmental Institute

Tim Jones

Has completed coursework and satisfactorily passed

an examination that meets all criteria required for

EPA / AHERA (TSCA Title II) Approved Accreditation

and NESHAP Regulations Training

Asbestos in Buildings: Inspection and Assessment

February 10-12, 1997
Course Date

2360
Certificate Number

February 12, 1997
Examination Date

February 11, 1998
Expiration Date

William H. Spain - Course Director

Rachel G. McCain - Exam Administrator

TEI - 1300 Williams Drive, Suite E - Marietta, Georgia 30066 - (770) 427-3600

The Environmental Institute

Tim Jones

Has completed coursework and satisfactorily passed
an examination that meets all criteria required for
EPA/AHERA/ASHARA (TSCA Title II) Approved Reaccreditation
and NESHAP Regulations Training

Asbestos in Buildings: Inspector Refresher

February 26, 2002
Course Date

7283
Certificate Number

February 26, 2002
Examination Date

February 25, 2003
Expiration Date

Thomas G. Laubenthal - Course Director

Rachel G. McCain - Exam Administrator

TEI - 1300 Williams Drive, Suite E - Marietta, Georgia 30066 - (770) 427-3600

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

HYGEIA LABORATORIES, INC.
MARIETTA, GA

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:

BULK ASBESTOS FIBER ANALYSIS

March 31, 2003
Effective through

David F. Alderman
For the National Institute of Standards and Technology

NVLAP Lab Code: 102087-0

NVLAP-01C (11-95)

National Institute of Standards and Technology

NVLAP®

National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Scope of Accreditation

BULK ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 102087-0**

HYGEIA LABORATORIES, INC.
1300 Williams Drive, Suite A
Marietta, GA 30066-6299
Mr. Clayton Call
Phone: 770-514-6933 Fax: 770-514-6966
E-Mail: call67@atc-enviro.com

NVLAP Code	*Designation*
18/A01	EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples

March 31, 2003

Effective through

David F. Alderman

For the National Institute of Standards and Technology

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Materials Survey

Building No. 4661 Ft. Bragg, North Carolina

Prepared by Timothy A. Jones

Approved for public release, distribution is unlimited

Building 4661, Fort Bragg, NC

by Timothy A. Jones

Final Report

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 4661 is a single story wood frame structure with a concrete slab floor in the kitchen area and a wood floor system in the dining area and latrine. The roof system is asphalt shingles over wood decking. The building was originally built to be a mess hall and still contains some kitchen equipment. The original portion of the building was reportedly built in 1948 with the addition of latrines in 1991. Interior finishes have been remodeled at an undisclosed time.

Description of study

Investigation

The survey consists of a count of fluorescent and mercury lights and a search for mercury containing equipment, lead building components, evidence of past or present underground storage tanks and for any other hazardous building materials excluding asbestos.

Conclusions

The following information gathered during the survey of Building 4661 is presented in attached information:

a. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

b. *Lead Building Materials: Inspection* of the building revealed lead in the plumbing drain and vent piping system. Details are outlined in Table 2

c. *Thermostats:* Two mercury-containing thermostats were located in the dining area of Building 4661. One is on the south wall and one on the east wall. Locations are indicated on the floor plan of Figure 1.

c. *Grease Traps: Two* above grade grease traps were located inside the building in the kitchen area. Locations are indicated on the floor plan of Figure 1.

d. *Fire Suppression System:* A fire suppression system including one compressed media bottle containing Sodium Bicarbonate Suppressant and associated piping to the exhaust hood in the kitchen may be considered hazardous. Copies of the MSDS sheet for this suppressant is available from Badger Fire Protection, Inc., 4251 Seminole Trail, Charlottesville, VA 22911, telephone number 800-424-9300 or can be obtained online. A copy is included as Appendix A.

e. *Compressed Refrigerant Gas:* A walk in cooler is located outside Building 4661 at the northwest corner. This cooler may contain refrigerant gas that should be recovered prior to demolition.

List of Tables

List of Figures

Appendix

Tables

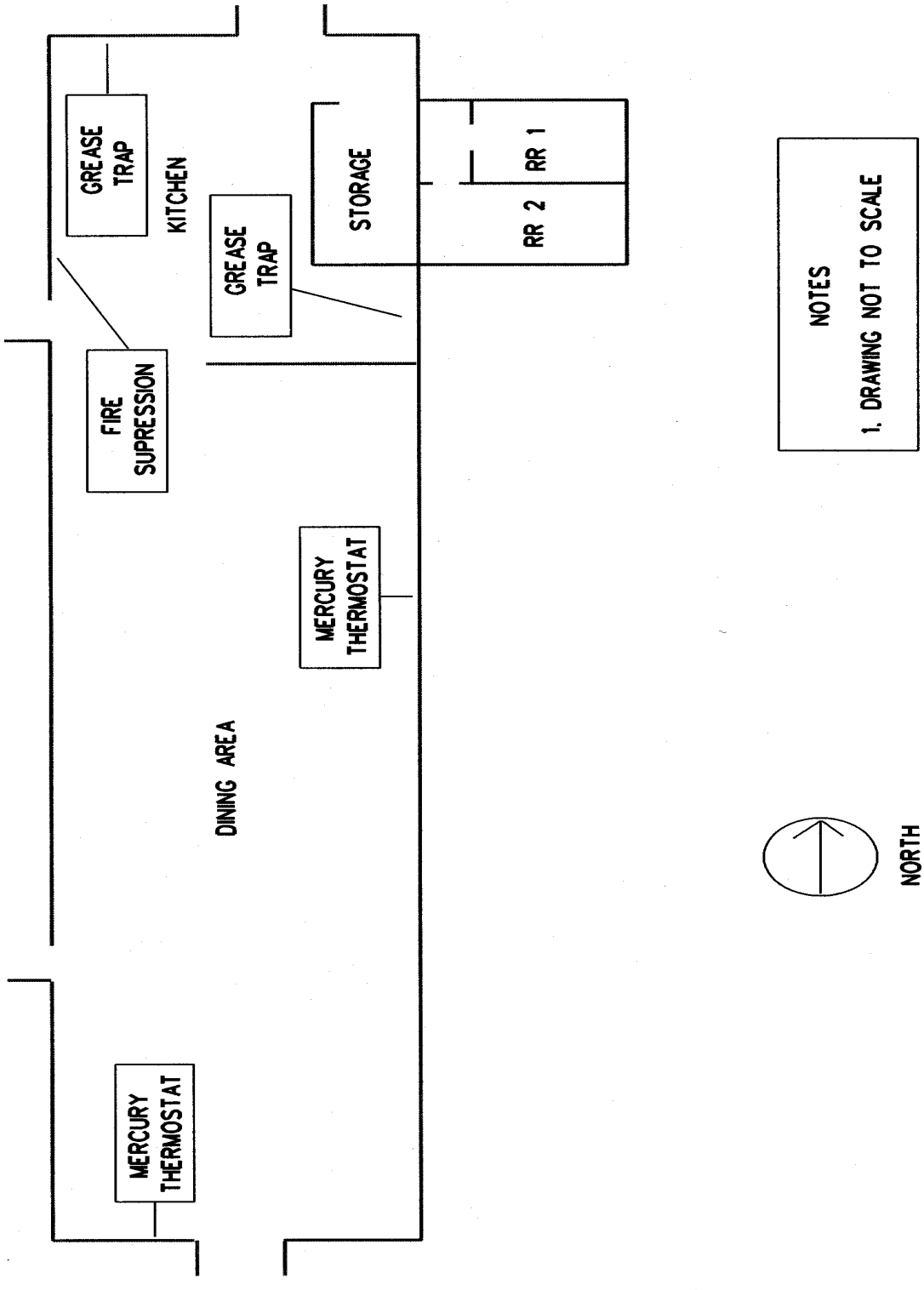
TABLE 1
Ft. BRAGG BUILDING 4661
FLORESCENT AND MERCURY LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Latrines	2	4 foot long, 4 bulb florescent fixtures
Interior	22	Small screw in florescent replacements for incandescent bulbs

TABLE 2
Ft. BRAGG BUILDING 4661
LEAD BUILDING COMPONENTS

BUILDING COMPONENT	DESCRIPTION	LOCATION	ESTIMATED NUMBER
Hot poured lead pipe joint	In plumbing drainage, waste and vent piping	Throughout building	50-100
Lead Flashing	On plumbing vent pipe system	Roof	3

Figure 1


GREASE TRAP
KITCHEN
GREASE TRAP
STORAGE
RR 1
RR 2
FIRE SUPRESSION
MERCURY THERMOSTAT
DINING AREA
MERCURY THERMOSTAT
NOTES
1. DRAWING NOT TO SCALE
NORTH

Appendix A

MSDS Sheet for Badger Fire Extinguisher

Material Safety Data Sheet

| Return |

BC Dry Chemical Powder - February 2002

Section 1 - Name & Hazard Summary

Material name: BC Dry Chemical Powder- Mixture of sodium bicarbonate, silicates and stearates

Manufacturer: Badger Fire Protection Phone (804) 973-4361

Section 2 - Ingredients

Potentially Hazardous Ingredients: None

Other Ingredients: Water: Wt PCT (Approx): 0.2

Sodium bicarbonate: Wt PCT (Approx): 90.0

Mineral silicates and stearates: Wt PCT (Approx): 9.8

Section 3 - Physical Data

pH: Appearance: White Powder **Odor:** None

Viscosity At 100°F, SUS: N/A **At 40°C, CS:** N/A

Viscosity at 210°F, SUS: N/A **At 100°C, CS:** N/A

Flash Point °F(°C): N/A **Melting Point °F(°C):** Not Established

Pour Point °F(°C): N/A **Boiling Point °F(°C):** N/A

Relative Density, 20/4°C: 2 **Apparent Density:** 1g/cm^3

Vapor Pressure mm Hg 20°C: N/A **Solubility in Water:** Partially Soluble

Section 4 - Fire and Explosion Hazard Data

Flash point: N/A

Flammable Limits in Air % by Volume: LEL Lower: N/A **UEL Upper:** N/A

Extinguisher Media: N/A

Special Fire Fighting Procedures: This material will not burn. However, use standard chemical firefighting procedures and consider the hazards of other involved materials. For fires in enclosed areas, firefighters must use self-contained breathing apparatus. Prevent runoff from fire control or dilution from entering streams or drinking water supply.

Unusual Fire and Explosion Hazards: None

NFPA Hazard ID: Health: 1, **Flammability:** 0, **Reactivity:** 0

Section 5 - Reactivity Data

Stability: Stable

Conditions to Avoid: Extreme heat

Incompatibility (Materials to Avoid): None

Hazardous Decomposition Products: Carbon dioxide and carbon monoxide.

Hazardous polymerization: Will not occur.

Section 6 - Health Hazard Assessment

D.O.T. Shipping Name: N/A **D.O.T. Hazard Class:** N/A

U.S. OSHA Hazard Communication Standard: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined not to be hazardous.

RCRA Information: The product, in our opinion, is not specifically listed by the EPA as hazardous waste (40 CFR, Part 261D); does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity, and is not formulated with metals cited in the EP toxicity test. U.S. Superfund Amendments and Reauthorization Act (SARA) Title: III: This product contains nd'Extremely Hazardous Substances: SARA (302) Reportable Hazard Categories: none This product is not formulated to contain PCBS nor Asbestos.

Includes aggravated medical conditions, if established -effects of overexposure: Prolonged breathing of dusts may cause respiratory irritation. Moderate eye irritation. Slight skin irritation.

Section 7 - Spill or Leak Procedures

Emergency and First Aid Procedures:

Eye Contact: Flush thoroughly with water for at least 15 minutes. Get medical assistance.

Skin Contact: Wash contact areas with soap and water.

Inhalation: Remove from further exposure. If unconsciousness occurs, seek immediate medical assistance and call a physician. If breathing has stopped, use mouth to mouth resuscitation.

Ingestion: Not expected to be a problem.

Environmental Impact: Report spills as required to appropriate authorities. U.S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number 800-4248802. In case of accident or road spill notify Chemtrec 800-423-8802.

Procedures If Material Is Released Or Spilled: Shovel up and dispose of at an appropriate waste disposal facility in accordance with currentapplicable laws and regulations, and product characteristics at time of disposal.

Waste Management: Dispose of waste at an appropriate waste disposal facility in accordance with current applicable laws and regulations, and product characteristics at time of disposal.

Section 8 - Special Protection Information

Eye Protection: Chemical type goggles should be worn.

Skin Protection: No special equipment required. However, good personal hygiene practices should always be followed.

Respiratory Protection: Approved dust respirators must be used for dusty conditions or if dust levels exceed established standards. No special requirements under ordinary conditions of use and with adequate ventilation.

Ventilation: Use well ventilated area.

Handling: Avoid contact with eyes. Avoid inhalation of dusts.

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Supplemental Asbestos Survey

Building No. 4662 Ft. Bragg, North Carolina

Prepared by Timothy A. Jones

Approved for public release, distribution is unlimited

Asbestos Survey **October 2002**

Building 4662, Fort Bragg, NC

by Timothy A. Jones

Final report

Prepared for **US Army Corps of Engineers**
Savannah District

Asbestos Inspection Report

Introduction

Scope of the Investigation

This report documents the supplemental asbestos inspection and survey of Building No.4662 at Fort Bragg, North Carolina conducted on 25-26 September 2002 by Savannah District US Army Corps of Engineers employees Tim Jones and Jack Ford. The survey was conducted in general accordance with the regulatory guidelines in the Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763 Subpart E Sections 763.80-763.88) and "Guidance for Controlling Asbestos-Containing Materials in Buildings" (Purple Book) (EPA publication number 560/5-85-024). Although not required by the AHERA guidelines, roof and other exterior miscellaneous materials were also inspected and sampled.

Background

Building No. 4662 is a one and one half story wood frame structure with a wood floor system over a crawl space in all areas except the mechanical room. The mechanical room floor is concrete slab on grade. The roof system is asphalt shingles over wood decking. Exterior wood siding has been covered with metal. There is a small concrete floored mezzanine at the north end of the building once used as a projection booth. The building was apparently once used as a movie theater but has been renovated and is most recently used as a band training facility. The original building was reportedly built in 1941 and remodeled in 1977 for band training use.

Description of study

Investigation

All accessible areas of Building No. 4662 were visually inspected to verify materials identified in the original asbestos report compiled by Law Environmental dated 25-26 October 1993. In addition, an accredited inspector sampled roofing materials and other suspect materials omitted in the original inspection. This report details ACM as identified at the time of inspection only.

The bulk samples were analyzed by Hygeia Laboratories, Inc. Hygeia is accredited by the National Voluntary Laboratory Accredited Program (NVLAP Accreditation sponsored by the National Institute of Standards and Technology (NIST)). A copy of

Hygeia's current accreditation certificates can be found in Appendix C. The samples were analyzed by the accepted method of polarized light microscopy (PLM) using EPA's "Method For the Determination of Asbestos In Bulk Building Materials", EPA/600/R-93/116. A copy of Hygeia's analytical report is included in Appendix A.

In compliance with the AHERA regulations, material is considered an Asbestos Containing Material (ACM) when it contains greater than one percent asbestos. Likewise, in this report, any material containing concentrations greater than one percent asbestos will be considered "positive". A narrative discussion of the AHERA ACM types (i.e., thermal systems insulation, miscellaneous and surfacing materials) found in Building No. 4662 is included in this report where relevant. Bulk sample information appears on Table 1. Estimated quantities of individual asbestos containing materials appear on Table 2. Material characterization of asbestos containing materials appears on Table 3. Photographs of the positive materials, when available, appear as Figures. The specific location where each bulk sample was obtained is shown on the building floor plans, which appear as Figures. Positive ACM samples are highlighted on the floor plan Figures and, where possible, locations of positive ACM are identified. It is reasonable to assume that all materials similar to those testing positive, also contain positive amounts of asbestos and should be treated as such.

Analysis

Thermal Systems Insulation (TSI)

TSI is insulation material applied to pipes, fittings, tanks, ducts, or for other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

All inspected TSI in Building 4662 is of non-asbestos materials.

Miscellaneous Materials

Miscellaneous materials include building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and do not include surfacing or TSI. In the past, there were a great number of miscellaneous building materials that had asbestos fibers added to them during the manufacturing process to increase durability and fireproofing qualities. The following suspect miscellaneous materials at Building No. 4662 were found to contain or were assumed to contain asbestos:

a. *Roofing Materials:* The roof shingles and felt were sampled and found to be non-asbestos materials. Some remnants of roofing cement were noted on metal roof vents and this cement is assumed to be asbestos containing– (Refer to Tables 2 and 3 for specific information and Figure 3 for homogeneous area locations).

b. Flooring Materials: The mastic associated with the 12" X 12" light blue floor tiles was identified by Law Engineering to be asbestos containing. No other flooring materials were found to contain asbestos - (Refer to Tables 1-3 for specific information, Figure 1 for sample locations and Figure 2 for homogeneous area locations).

c. Asbestos Cement Board: Asbestos containing cement wallboard (similar to Transite ™) is applied to the walls and ceiling throughout the mechanical room. This material is approximately ¼ " thick and is in approximately 4' X 8' sheets - (Refer to Tables 1-3 for specific information, Figure 1 for sample location and Figure 2 for homogeneous area location).

d. Heat Shield Material: Asbestos containing heat shield board is applied to wooden framing for what was once a vent through the roof above the mezzanine level. Some of this material is also lying on top of the fiberboard ceiling approximately 6 feet south of the vent location. - (Refer to Tables 1-3 for specific information, Figure 1 for sample location, Figure 2 for homogeneous area locations and Figure 4 for visual material identification).

e. Duct Flex Joint: Cloth flex joint (or vibration isolation) material in the ductwork at the mezzanine level contains asbestos - (Refer to Tables 1-3 for specific information, Figure 1 for sample location, Figure 2 for homogeneous area location and Figure 5 for visual material identification).

Surfacing

Surfacing material is friable material that is sprayed on, troweled on, or otherwise applied to surfaces for decorative or other purposes.

No surfacing material was found to be asbestos containing.

Conclusions

The following materials found at Building No. 4661 contain positive amounts of asbestos:

a. Mastic: Mastic associated with 12" X 12" light blue floor tiles contains asbestos.

b. Roofing Cement: Black roofing cement applied to metal vents through the roof is <u>assumed</u> to contain asbestos.

c. Heat Shield Board: Heat shield board on wooden framing above the mezzanine and scrap on top of the fiberboard ceiling south of the mezzanine contains asbestos.

d. *Cement Board:* Asbestos cement board on the mechanical room walls and ceiling contains asbestos.

e. *Duct Flex Joint:* White *c*loth flex joint material in the ductwork above the mezzanine contains asbestos.

List of Tables

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Appendix

U.S. ARMY CORPS OF ENGINEERS
ENVIRONMENTAL & MATERIALS UNIT

TABLE 1
SUSPECT ACM SAMPLES
Ft. BRAGG, BUILDING 4662

FIELD ID	DESCRIPTION	LOCATION	ASBESTOS TYPE & %
4662-M-1	**Duct flex joint**	**Mezzanine**	**40% chrysotile**
4662-M-2	Ceiling tile (excess)	Mezzanine, pile on floor	None
4662-M-3	Sheetrock	Mezzanine, around duct through wall	None
4662-M-4	**Heat shield board**	**Mezzanine, box vent to roof**	**30% chrysotile**
4662-M-5	TSI duct wrap & mastic	Mezzanine	None
4662-A-6	TSI duct wrap & mastic	Attic	None
4662-A-7	Fiberboard	Attic area wall covering	None
4662-1-8	Floor tile	First floor, north end	None
4662-M-9	Rolled roofing	Under concrete mezzanine floor	None
4662-1-10	Sheetrock	First floor, under paneling	None
4662-1-11	Cove base & mastic	First floor	None
4662-1-12	Wall insulation, mineral wool	First floor interior walls	None
4662-1-13	Ceiling tile	First floor	None
4662-A-14	Fiberboard	Attic	None
4662-E-15	Sheetrock	Exterior walls under siding	None
4662-1-16	Ceiling tile	First floor	None
4662-1-17	Acoustical wall insulation	First floor	None
4662-A-18	Cellulose wallboard	Attic	None
4662-A-19	Cellulose wallboard	Attic	None
4662-A-20	Cellulose wallboard	Attic	None
4662-1-21	Drywall joint compound	First floor	None
4662-1-22	Drywall joint compound	First floor	None

4662-1-23	Sheetrock	First floor	None
4662-1-24	Drywall joint compound	First floor	None
4662-A-25	Texture painted fiberboard	Attic	None
4662-A-26	Cellulose wallboard	Attic	None
4662-1-27	Sheetrock	First floor	None
4662-MR-28	**Asbestos cement board**	**Mechanical room**	**35% chrysotile**
4662-MR-29	Sheetrock	Mechanical room	None
4662-R-30	Roof shingle	Roof	None
4662-R-31	Roof felt	Roof	None
4662-M-32	Rolled roofing	Under concrete mezzanine floor	None
4662-1-33	Black mastic	First floor	None
4662-1-34	Craft paper	First floor	None
4662-1-35	Floor leveling compound	First floor	None

Samples testing positive for asbestos indicated in **BOLD** type

In sample field ID center position: M=Mezzanine, A=Attic, MR=Mechanical Room, R=Roof, 1=first floor

TABLE 2
ACM QUANTITY SUMMARY
Ft. BRAGG, BUILDING 4662

Material Descriptions	Units	Area Descriptions							
		FIRST FLOOR	ROOF	MEZZANINE	MECHANICAL ROOM				Totals
Roofing Cement	S.F.		10						10
Mastic For Floor Tile	S.F.	525							525
Asbestos Cement Board	S.F.				1020				1020
Duct Flex Joint	L.F.			14					14
Heat Shield Board	S.F.			70					70

S.F. = Square Foot, L.F. = Linear Foot, C.F. = Cubic Foot

TABLE 3
MATERIAL CHARACTERIZATION AND ASSESSMENT
Ft. BRAGG, BUILDING 4662

MATERIAL		CHARACTERISTICS			ASSESSMENT	
Type	**Description**	**Asbestos Yes/no/assumed**	**Quantity (If ACM)**	**Friable / Non-friable**	**Condition**	**Disturbance Potential**
Miscellaneous	Roofing cement	Assumed	10 S.F.	Non-friable	Good	Low
Miscellaneous	Floor Tile Mastic	Yes 10 %	525 S.F.	Non-friable	Good	Low
Miscellaneous	Asbestos Cement Board	Yes 35%	130 S.F.	Non-friable	Good	Moderate
Miscellaneous	Duct Flex Joint	Yes 40%	14 L.F.	Non-friable	Good	Low
Miscellaneous	Heat Shield Board	Yes 30%	70 S.F.	Friable	Damaged	Moderate

S.F. = Square Foot, L.F. = Linear Foot, C.F. = Cubic Foot

Figure 1

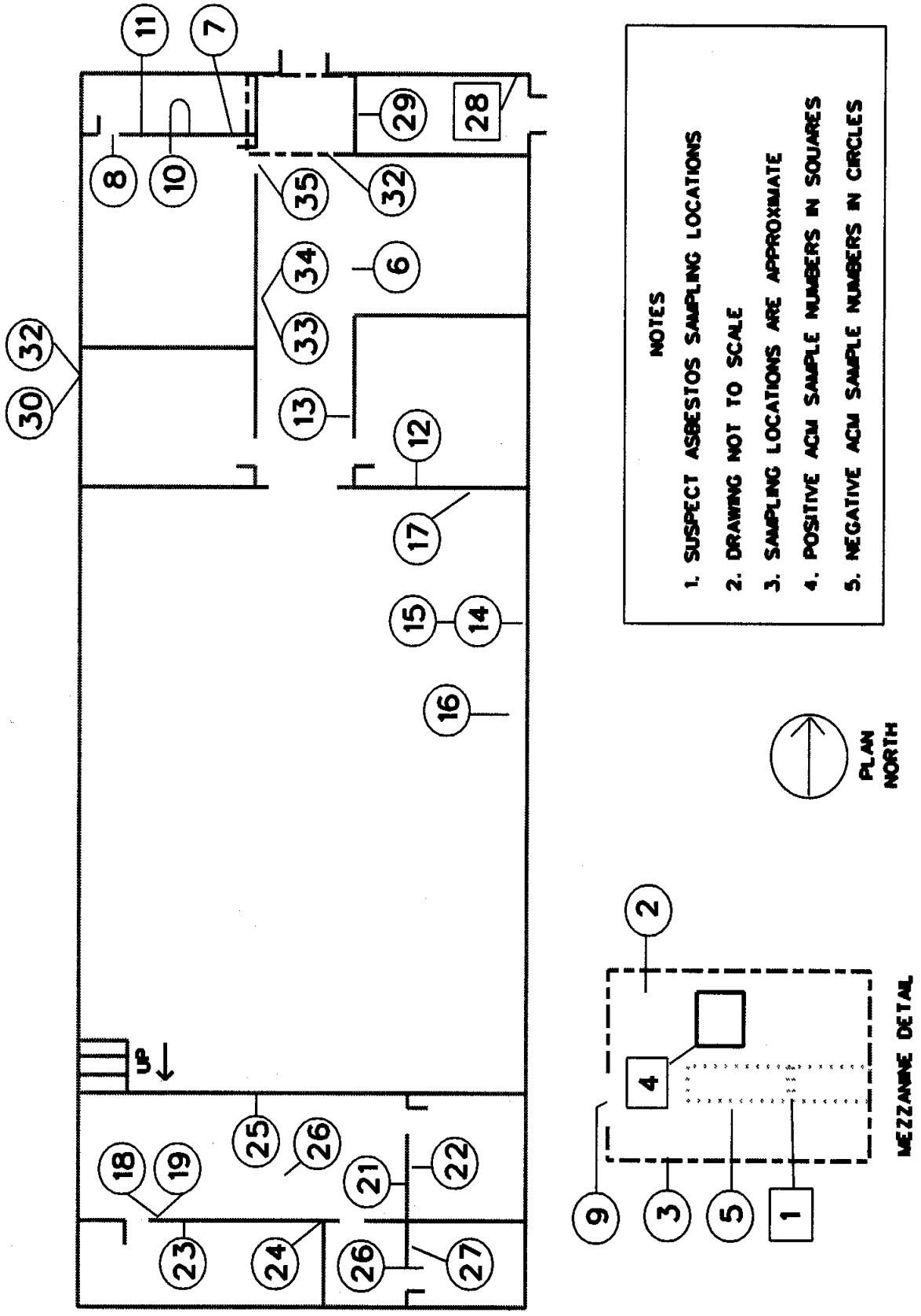

NOTES
1. SUSPECT ASBESTOS SAMPLING LOCATIONS
2. DRAWING NOT TO SCALE
3. SAMPLING LOCATIONS ARE APPROXIMATE
4. POSITIVE ACM SAMPLE NUMBERS IN SQUARES
5. NEGATIVE ACM SAMPLE NUMBERS IN CIRCLES
PLAN NORTH
UP
MEZZANINE DETAIL

Figure 2

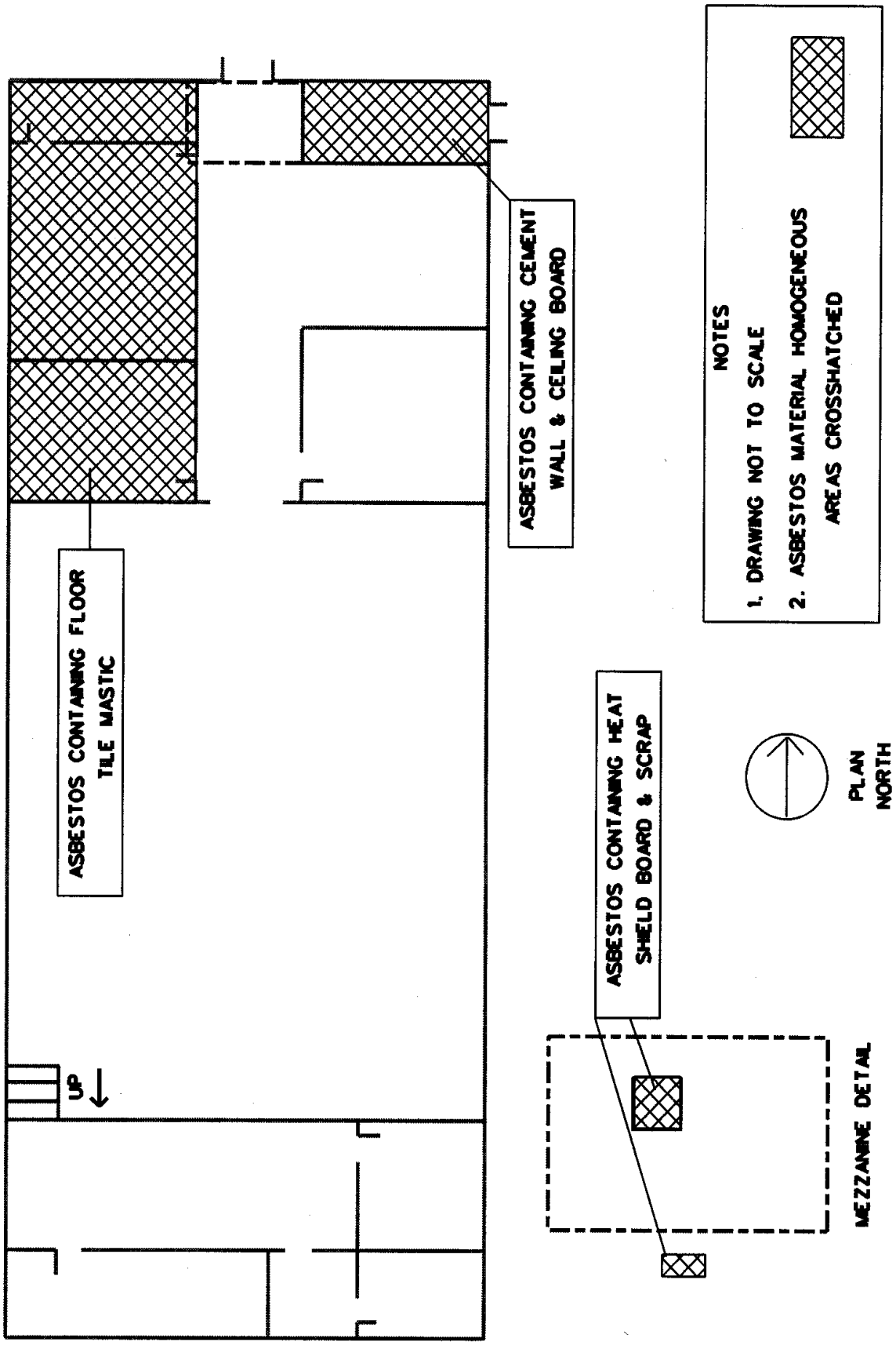

NOTES
1. DRAWING NOT TO SCALE
2. ASBESTOS MATERIAL HOMOGENEOUS AREAS CROSSHATCHED
ASBESTOS CONTAINING CEMENT WALL & CEILING BOARD
ASBESTOS CONTAINING FLOOR TILE MASTIC
ASBESTOS CONTAINING HEAT SHIELD BOARD & SCRAP
UP
PLAN NORTH
MEZZANINE DETAIL

Figure 3

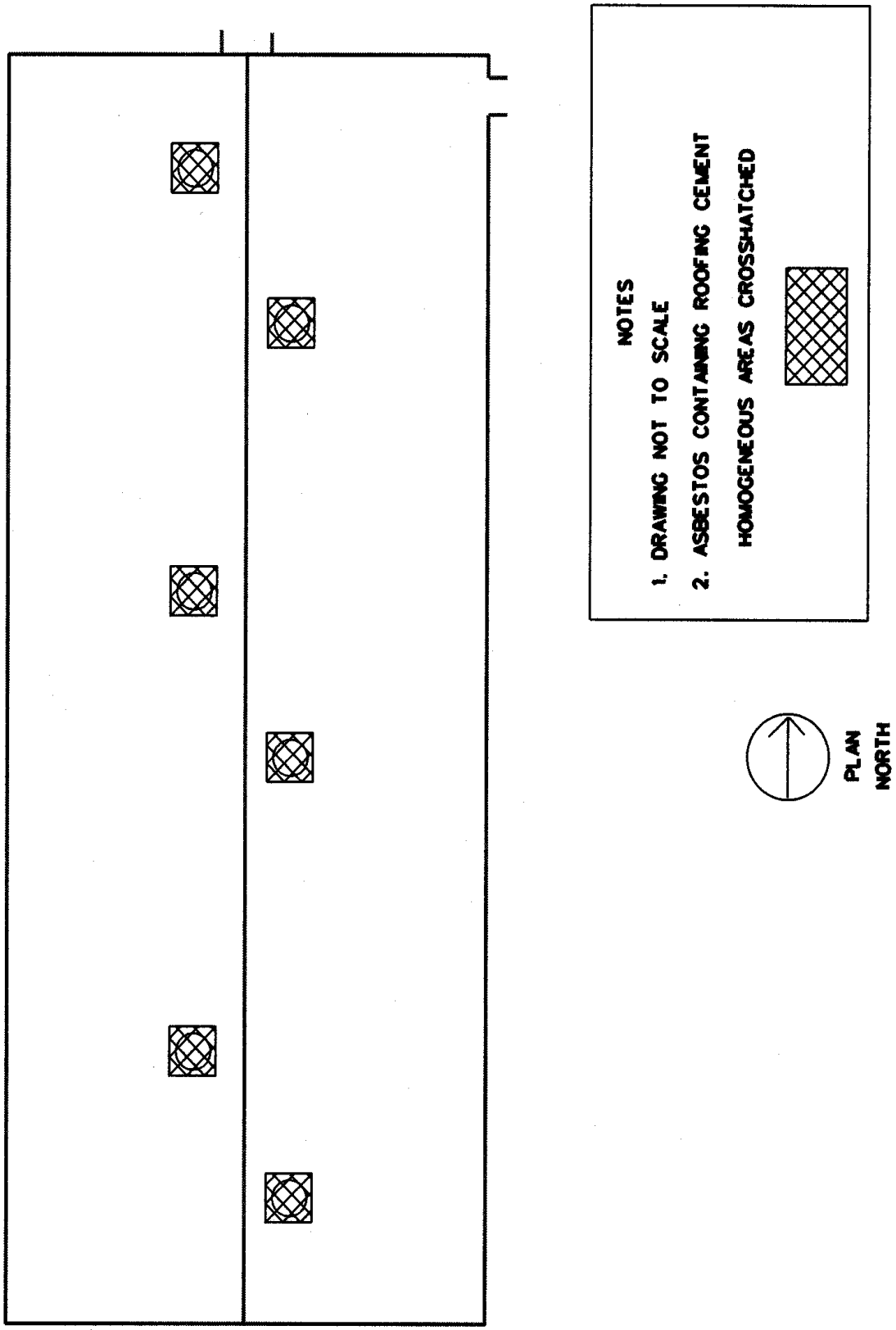

NOTES
1. DRAWING NOT TO SCALE
2. ASBESTOS CONTAINING ROOFING CEMENT
HOMOGENEOUS AREAS CROSSHATCHED
PLAN
NORTH

Figure 4

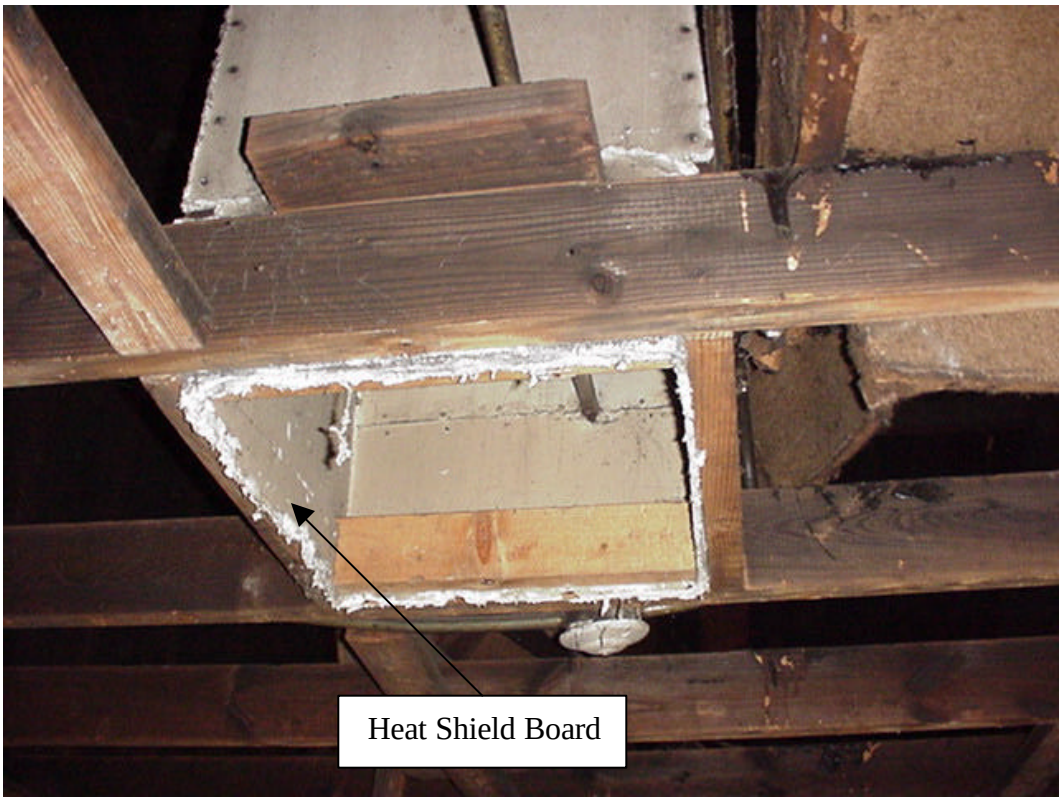
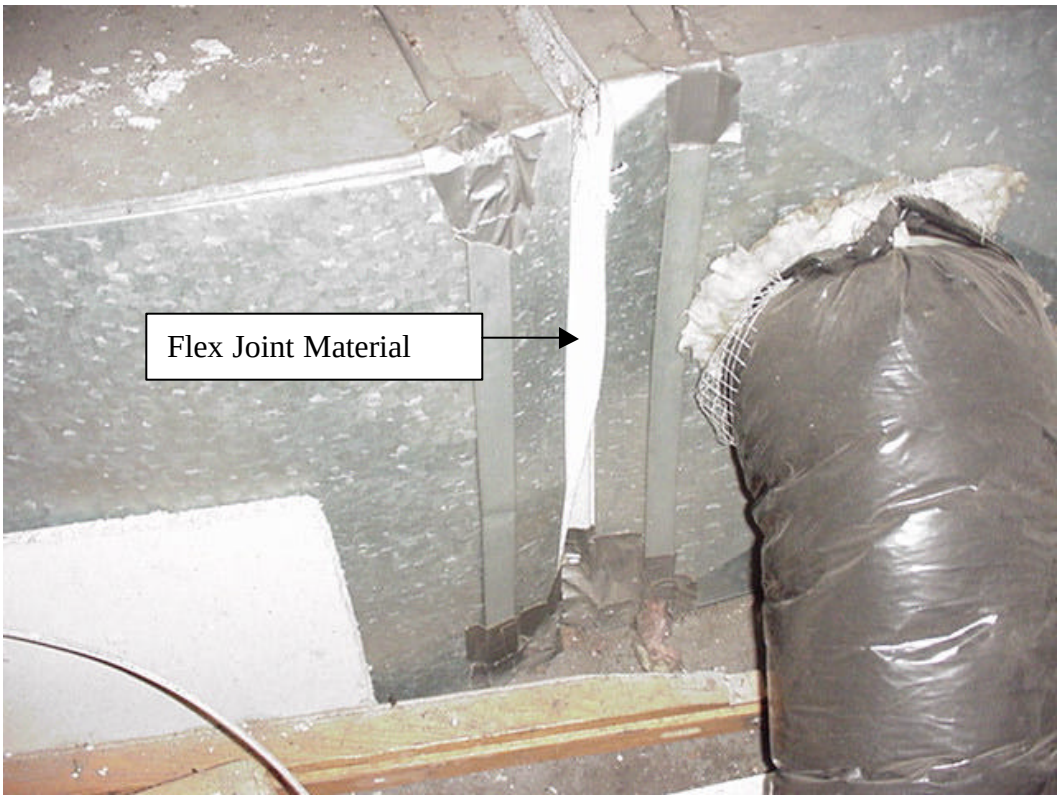


Figure 5



Appendix A

Analytical Report - Hygeia Laboratories, Inc.

HYGEIA LABORATORIES, INC.

1300 Williams Drive, Suite A - Marietta, Georgia 30066-6299 - (770) 514-6933, FAX (770) 514-6966

US Army Corp of Engineers
Environmental & Materials Unit
200 North Cobb Parkway
Bldg. 400, Ste. 404
Marietta, GA 30062

10/3/2002

Subject:

Hygeia Project Number: A0210003
Client Project Number/Name: 7625 /Ft. Bragg Bldg 4662

Dear Mr. Tim Jones:

Enclosed are the analytical results of bulk samples submitted by you to this laboratory on 9/27/2002. All analyses were performed by polarized light microscopy (PLM) in accordance with the EPA method as defined in Perkins and Harvey, July 1993, "Methods for the Determination of Asbestos in Bulk Materials" 61pp. (EPA/600/R-93/116). The reported percentages are volume estimates obtained by calibrated visual estimation. The results in this report apply only to the items tested.

The EPA defines an asbestos containing material (ACM) as a material that is reported to contain greater than one percent asbestos. HYGEIA is only responsible for the accuracy of the analytical results provided in this report and cannot be held responsible for the errors resulting from improper sample collection techniques. This report may not be used to claim product endorsement by NVLAP or any other U.S. Government agency.

For nonhomogeneous samples, each layer was analyzed separately and the results combined to form the reported value except where otherwise noted. Vinyl floor tile samples with negative results by PLM should be submitted for confirmation by transmission electron microscopy (TEM). Friable samples containing less than 10% asbestos as determined by PLM may be resubmitted for point counting at your discretion.

Thank you for using our analytical services. HYGEIA Laboratories has been NVLAP accredited since 1988. Our current NVLAP code is 102087-0. We will keep a copy of this report on file for three years. We will dispose of your samples in 60 days unless you request that we return them. This report my be reproduced only in its entirety with the consent of Hygeia Laboratories, Inc. If you have any questions, please call us at (770) - 514-6933.

Sincerely,

Clayton Call

Clayton Call
Asbestos Laboratory Manager

NVLAP#	102087-0
Texas Dept. of Health #	30-0232
Commonwealth of Virginia #	3333-000210

Hygeia Laboratories Inc.
1300 Williams Drive, Suite A
Marietta, GA 30066
(770) 514-6933

PLM Analysis Summary

Hygeia Project Number: A0210003
Client Project Number/Name: 7625 / Ft. Bragg Bldg 4662

Analyzed: 9/27/2002 by WAS

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-M-1	A0210003-01	White	Fibrous	Yes	40%								60%	

Comment: **Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-M-2	A0210003-02	Brown	Cons.	Yes						40%	20%		40%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-M-3	A0210003-03	Multi	Cons.	Yes						20%			80%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-M-4	A0210003-04	Tan	Fibrous	Yes	30%					5%			65%	

Comment: **Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-M-5	A0210003-05	Multi	Fibrous	Yes						30%			70%	

Comment: **No Asbestos Detected.**

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-A-6	A0210003-06	Multi	Fibrous	Yes						70%			30%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-A-7	A0210003-07	Brown	Cons.	Yes						70%			30%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-8	A0210003-08	Gray	Cons.	Yes						<1%			100%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-M-9	A0210003-09	Brown	Fibrous	Yes						40%			60%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-10	A0210003-10	Multi	Cons.	Yes						30%			70%	

Comment: **No Asbestos Detected.**

Hygeia Project Number: A0210003
Client Project Number/Name: 7625 / Ft. Bragg Bldg 4662

Analyzed: 9/27/2002 by JC

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-11	A0210003-11	Gray	Rubbery	No						2%			98%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-12	A0210003-12	Tan	Fibrous	Yes							80%		20%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-13	A0210003-13	White	Fibrous	No						40%	20%		40%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-A-14	A0210003-14	Tan	Layered	No						60%			40%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-E-15	A0210003-15	Tan	Layered	No						20%			80%	

Comment: **No Asbestos Detected.**

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-16	A0210003-16	White	Fibrous	No						20%	50%		30%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-17	A0210003-17	White	Fibrous	No							70%		30%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-A-18	A0210003-18	Gray	Layered	No						70%			30%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-A-19	A0210003-19	Gray	Layered	No						70%			30%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-A-20	A0210003-20	Gray	Layered	No						70%			30%	

Comment: **No Asbestos Detected.**

Hygeia Project Number: A0210003 **Page:** 5 of 8
Client Project Number/Name: 7625 / Ft. Bragg Bldg 4662 **Analyzed:** 9/27/2002 by WAS

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-21	A0210003-21	Multi	Cons.	Yes						40%			60%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-22	A0210003-22	White	Cons.	Yes									100%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-23	A0210003-23	Multi	Cons.	Yes						10%			90%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-24	A0210003-24	Multi	Cons.	Yes						20%			80%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-A-25	A0210003-25	Brown	Cons.	Yes						80%			20%	

Comment: **No Asbestos Detected.**

Hygeia Project Number: A0210003
Client Project Number/Name: 7625 / Ft. Bragg Bldg 4662

Analyzed: 9/27/2002 by JC

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-A-26	A0210003-26	Gray	Fibrous	No						70%			30%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-27	A0210003-27	Gray	Layered	No						20%			80%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-MR-28	A0210003-28	Gray	Cons.	Yes	35%								65%	

Comment: **Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-MR-29	A0210003-29	White	Layered	No						25%			75%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-R-30	A0210003-30	Black	Gummy	No						10%	20%		70%	

Comment: **No Asbestos Detected.**

Sample ID		Sample Description			Asbestos Percent					Other Fibers			Non - Fibers	
Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-R-31	A0210003-31	Black	Fibrous	Yes						80%			20%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-M-32	A0210003-32	Black	Gummy	Yes						15%			85%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-33	A0210003-33	Black	Layered	No						90%			10%	

Comment: **Mastic: NAD. No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-34	A0210003-34	Tan	Fibrous	No						60%			40%	

Comment: **No Asbestos Detected.**

Client #	Hygeia #	Color	Texture	Homog.	Chr.	Am.	Cro.	An.	T/A	Cell.	Glass	OF	B/F	ONF
4662-1-35	A0210003-35	White	Flaky	No									100%	

Comment: **Floor leveling compound: NAD. Mastic: NAD. No Asbestos Detected.**

abbreviations:

Chr. = chrysotile	cell = cellulose	per = perlite	OF = Other Fibers
Am. = amosite	glass = fibrous glass	ver = vermiculite	ONF = Other Non-Fibers
Cro. = crocidolite	syn = synthetic	MF = Mineral filler	Cons = Consolidated
An. = anthophyllite	sty = styrene foam	B/F = Binder / filler	
T/A = tremolite/actinolite	det = detected	**NAD = No asbestos detected**	

Appendix B

Sample Chain of Custody Forms

ASBESTOS CHAIN OF CUSTODY - US ARMY CORPS OF ENGINEERS

Project: **Ft. Bragg Bldg. 4662**	EMU Job No.: **7625**
Samplers: Tim Jones, Jack Ford	Analysis: PLM

DATE	FIELD ID	EMU ID	COMPONENTS / NOTES
9/25/2002	4662-M-1	44455	Duct flex joint
9/25/2002	4662-M-2	44456	Ceiling tile
9/25/2002	4662-M-3	44457	Gypsum drywall
9/25/2002	4662-M-4	44458	Heat shield board
9/25/2002	4662-M-5	44459	TSI fibrous duct wrap and black mastic
9/25/2002	4662-A-6	44460	TSI fibrous duct wrap and black mastic
9/25/2002	4662-A-7	44461	Fiberboard
9/25/2002	4662-1-8	44462	Floor tile
9/25/2002	4662-M-9	44463	Rolled roofing
9/25/2002	4662-1-10	44464	Gypsum drywall
9/25/2002	4662-1-11	44465	Cove base with mastic
9/25/2002	4662-1-12	44466	Wall insulation
9/25/2002	4662-1-13	44467	Ceiling tile
9/25/2002	4662-A-14	44468	Fiberboard
9/25/2002	4662-E-15	44469	Gypsum drywall
9/25/2002	4662-1-16	44470	Ceiling tile
9/25/2002	4662-1-17	44471	Acoustical wall insulation
9/25/2002	4662-A-18	44472	Wallboard
9/25/2002	4662-A-19	44473	Wallboard
9/25/2002	4662-A-20	44474	Wallboard
9/25/2002	4662-1-21	44475	Drywall joint compound
9/25/2002	4662-1-22	44476	Drywall joint compound

Relinquished By	Date	Time	Received By	Date	Time
Tim Jones	9-27-02	1245		9/27/02	

Comments: Fax results to Tim Jones @ 678-354-0330
Contact Tim Jones at 678-354-0310 to determine which samples to point count

ASBESTOS CHAIN OF CUSTODY - US ARMY CORPS OF ENGINEERS

Project: **Ft. Bragg Bldg. 4662**	EMU Job No.: **7625**
Samplers: Tim Jones, Jack Ford	Analysis: PLM

DATE	FIELD ID	EMU ID	COMPONENTS / NOTES
9/25/2002	4662-1-23	44477	Gypsum drywall
9/25/2002	4662-1-24	44478	Drywall joint compound
9/25/2002	4662-A-25	44479	Fiberboard with textured paint
9/25/2002	4662-A-26	44480	Wallboard
9/25/2002	4662-1-27	44481	Gypsum drywall
9/25/2002	4662-MR-28	44482	Cement board
9/25/2002	4662-MR-29	44483	Gypsum drywall
9/25/2002	4662-R-30	44484	Roof shingle
9/25/2002	4662-R-31	44485	Roof felt
9/26/2002	4662-M-32	44486	Rolled roofing
9/26/2002	4662-1-33	44487	Black adhesive mastic on wood
9/26/2002	4662-1-34	44488	Craft paper
9/26/2002	4662-1-35	44489	Floor leveling compound

Relinquished By	Date	Time	Received By	Date	Time
Tim Jones	9-27-02	1245		9/27/02	

Comments: Fax results to Tim Jones @ 678-354-0330
Contact Tim Jones at 678-354-0310 to determine which samples to point count

Appendix C

Certifications

The Environmental Institute

Tim Jones

Has completed coursework and satisfactorily passed
an examination that meets all criteria required for
EPA / AHERA (TSCA Title II) Approved Accreditation
and NESHAP Regulations Training

Asbestos in Buildings: Inspection and Assessment

February 10-12, 1997
Course Date

2360
Certificate Number

February 12, 1997
Examination Date

February 11, 1998
Expiration Date

William H. Spain - Course Director

Rachel G. McCain - Exam Administrator

TEI - 1300 Williams Drive, Suite E - Marietta, Georgia 30066 - (770) 427-3600

The Environmental Institute

Tim Jones

Has completed coursework and satisfactorily passed
an examination that meets all criteria required for
EPA/AHERA/ASHARA (TSCA Title II) Approved Reaccreditation
and NESHAP Regulations Training

Asbestos in Buildings: Inspector Refresher

February 26, 2002
Course Date

7283
Certificate Number

February 26, 2002
Examination Date

February 25, 2003
Expiration Date

Thomas G. Laubenthal - Course Director

Rachel G. McCain - Exam Administrator

TEI - 1300 Williams Drive, Suite E - Marietta, Georgia 30066 - (770) 427-3600

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

HYGEIA LABORATORIES, INC.
MARIETTA, GA

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:

BULK ASBESTOS FIBER ANALYSIS

March 31, 2003
Effective through

David F. Alderman
For the National Institute of Standards and Technology

NVLAP Lab Code: 102087-0

NVLAP-01C (11-95)

National Institute of Standards and Technology

NVLAP®

National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Scope of Accreditation

BULK ASBESTOS FIBER ANALYSIS **NVLAP LAB CODE 102087-0**

HYGEIA LABORATORIES, INC.
1300 Williams Drive, Suite A
Marietta, GA 30066-6299
Mr. Clayton Call
Phone: 770-514-6933 Fax: 770-514-6966
E-Mail: call67@atc-enviro.com

NVLAP Code	*Designation*
18/A01	EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples

March 31, 2003

Effective through

David F. Alderman

For the National Institute of Standards and Technology

NVLAP-01S (11-95)

Savannah District
Environmental and Materials Unit

US Army Corps of Engineers®

Hazardous Building Material Survey

Building No. 4662 Ft. Bragg, North Carolina

Prepared by Timothy A. Jones

Building 4662, Fort Bragg, NC

by Timothy A. Jones

Final report

Prepared for **US Army Corps of Engineers**
Savannah District

Hazardous Building Materials Survey Report

Introduction

Background

Building No. 4662 is a one and one half story wood frame structure with a wood floor system over a crawl space in all areas except the mechanical room. The mechanical room floor is concrete slab on grade. The roof system is asphalt shingles over wood decking. Exterior wood siding has been covered with metal. There is a small concrete floored mezzanine at the north end of the building once used as a projection booth. The building was apparently once used as a movie theater but has been remodeled and is most recently used as a band training facility. The original building was reportedly built in 1941 and remodeled in 1977 for band training use.

Description of study

Investigation

The survey consists of a count of fluorescent and mercury lights and a search for mercury containing equipment, lead building components, evidence of past or present underground storage tanks and for any other hazardous building materials excluding asbestos.

Conclusions

The following information gathered during the survey of Building 4662 is presented in attached information:

d. *Light Count:* The fluorescent and mercury vapor light count results are presented in Table 1.

e. *Lead Building Materials:* Inspection of the building revealed no lead in the plumbing drain and vent piping system or other building materials.

c. *Thermostats:* One mercury-containing thermostat was located in Building 4662. The Location is indicated on the floor plan of Figure 1.

d. *Compressed Refrigerant Gas:* Compressed refrigerant gas (freon^{TM}) should be recycled from one central air conditioner and one drinking fountain prior to demolition.

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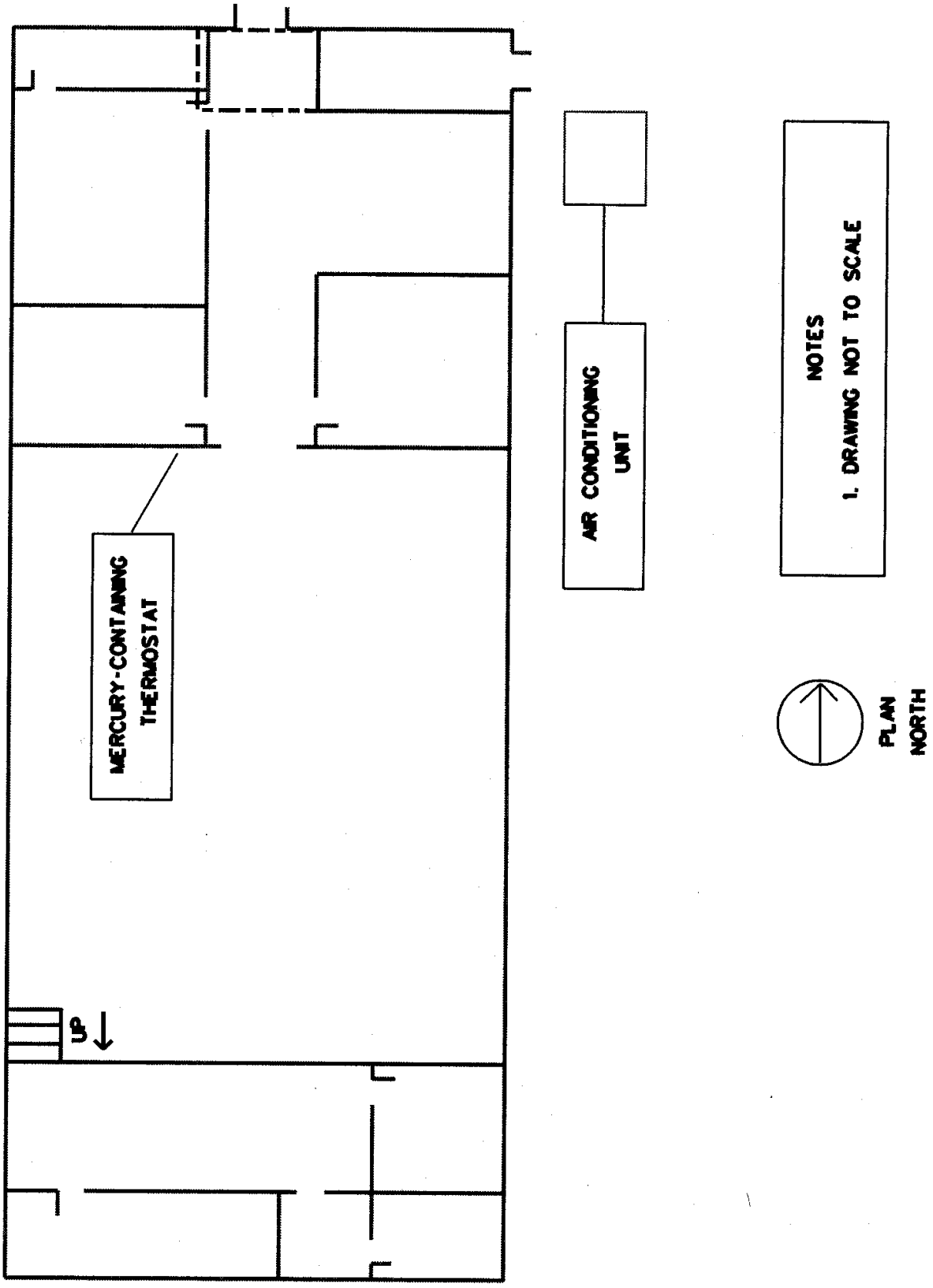
Tables

TABLE 1
Ft. BRAGG BUILDING 4662
FLORESCENT AND MERCURY LIGHT FIXTURES

AREA IDENTIFICATION	# & TYPE LIGHTS PRESENT	DESCRIPTION OF LIGHTS
Interior	41	4 foot long, 4 bulb florescent fixtures
Interior	25	Loose 4 foot florescent bulbs

Figure 1


MERCURY-CONTAINING THERMOSTAT
AIR CONDITIONING UNIT
UP
NOTES
1. DRAWING NOT TO SCALE
PLAN NORTH